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CLINICAL INVESTIGATION.(U)
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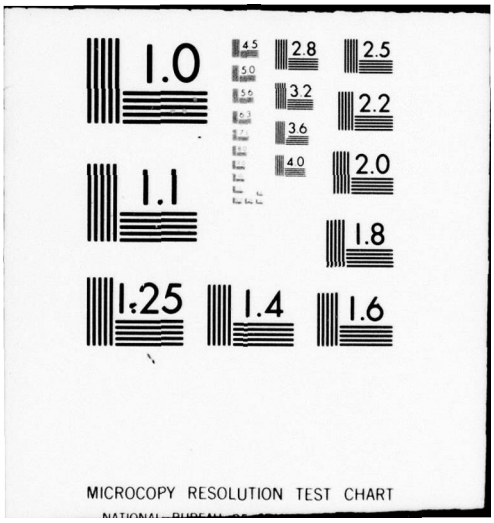
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Laboratory
Report No. 14

LEVEL II

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Denver, Colorado 80240

Clinical Investigation Service

Annual Progress Report

30 September 1978

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Subject report identifies the research activities conducted by Fitzsimons Army Medical Center investigators through protocols approved by the Clinical Investigation Committee and registered with the Clinical Investigation Service during Fiscal Year 1978 and other known presentations and publications by the Fitzsimons Army Medical Center professional staff. The research protocols described were conducted under the provisions of AR 40-38, as amended, Clinical Investigation Program, AR 40-7, Use of Investigational Drugs in Humans, (continued on reverse side)

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publications, presentations of research data (at national, international and regional science meetings)
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protocol training and support programs
protocol registration
protocol status (ongling, completed, terminated)
technological base (personnel and equipment)
experimental design (statistical tools, etc).

Block 20. Abstract

AR 70-25, Use of Volunteers as subjects of research and FAMC Reg. 40-38, Clinical Investigation Service, policies and procedures, to insure the medical being, preservation of rights and dignity of human subjects who participated in these investigations.

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CLINICAL INVESTIGATIONS (U)

FITZSIMONS ARMY MEDICAL CENTER

DENVER, COLORADO 80240

FOREWORD

This report identifies the research activities conducted by Fitzsimons Army Medical Center investigators through protocols approved by the Clinical Investigation Committee and Human Use Committee and registered with the Clinical Investigation Service during Fiscal Year 1978 along with other known presentations and publications by FAMC professional staff.

The research protocols described in this report were conducted under the provisions of AR 40-38, as amended*, Clinical Investigation Program, AR 40-7, Use of Investigational Drugs in Humans, AR 70-25, Use of Volunteers as Subjects of Research, and FAMC Reg. 40-8, Clinical Investigation Program, FAMC, to insure the medical safety, well being, preservation of rights and dignity of human subjects who participated in these investigations.

In conducting the research described in this report, the investigator(s) adhered to AR 70-18, Laboratory Animals, Procurement, Transportation, Use, Care, and Public Affairs and the "Guide for Laboratory Animal Facilities and Care," as promulgated by the Committee or the Guide for Laboratory Animal Resources, National Academy of Sciences, National Research Council.

Clinical Investigation Service is especially grateful to BRIGADER GENERAL PHILIP A. DEFFER, MC, Commanding General, Fitzsimons Army Medical Center, his professional and administrative staffs, and to the Commanding Officers and staffs of other supporting activities for the cooperation and assistance provided the Clinical Investigation Service in our efforts to accomplish our mission. Finally, I would like to recognize the outstanding work, dedication, and whole-hearted corroboration of my entire staff. I would especially like to thank my Proto/Ed Asst, Ms. Val McCrill and Mrs. Chris Montoya, clerk-stenographer, without whose assistance and support this report would not have been possible.

Donald G. Corby

DONALD G. CORBY, M.D.
COL, MC
Chief, Clinical Investigation Service

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Charles, M.A.: Regulation of the Messenger RNA for Calcium Binding Protein by 1,25-dihydroxycholecalciferol. Presented: National Endocrine Society Meetings, Miami, Florida, 1978.

Charles, M.A.: Mechanisms of Islet Allograft Rejection. Presented: National Diabetes Associations Meetings, Boston, Mass., 1978.

Charles, A., Brown, G.L., and P. O'Barr. Pancreatic Islet Allograft Rejection. Accepted for presentation, American Diabetic Association, 1978.

Corby, D.G.: Aspirin in Pregnancy: Maternal and Fetal Effects. Presented: Aspirin and Acetaminophem, Proceedings of a Symposium New York, November 1977.

DEPARTMENT OB-GYN

Bobitt, R.J.: Abnormal Antepartum Fetal Heart Rate Tracings, Failure to Intervene and Fetal Death: Review of Five Cases Reveals Potential Pitfalls of Antepartum Monitoring Programs. Presented: Armed Forces Seminar, New Orleans, Louisiana, 16th Annual Meeting, 15 October 1977.

Lazarus, E.J.: A Comparison of Serum Estriol Levels and Human Placenta Lactogen (HPL) Levels in the Management of Hypertensive and Vascular Disease in Pregnancy. Presented: 16th Annual Meeting, Armed Forces Seminar, New Orleans, Louisiana, 15 October 1977.

Hiller, D.A.: Tubal Ligation Syndrome: Myth or Reality. Presented: 16th Annual Meeting, Armed Forces Seminar, New Orleans, Louisiana, 15 October 1977.

DEPARTMENT OF PEDIATRICS

Ford, K.A.: The Role of the Pediatric Nurse Clinician (PNC) in Counseling Parents of Children with Congenital Heart Disease. Presented: Military Section AAP, New York City, New York, November 1977.

Luzier, T.: The Treatment of Gravid Females Colonized with Group B beta-hemolytic Streptococcus: A randomized Controlled Study. Presented: Military Section AAP, New York City, New York, November 1977.

Luzier, T.: The Treatment of Gravid Females at Term Colonized with Group B Streptococcus. Presented: WSPR, Carmel, California, February, 1978.

Merenstein, G.B.: Central Nervous System Problems. Presented: Newborn Air Transport Conference, Denver, Colorado, February 1978.

Pediatrics - continued

Merenstein, G.B.: Neonatal Air Transport and Congenital Heart Disease. Presented: Newborn Air Transport Conference, Denver, Colorado, February, 1978.

Merenstein, G.B.: Radiant Heaters vs. Standard Incubators for Neonatal Care. Presented: 3rd Annual Conference on Neonatal-Perinatal Medicine, Lake Tahoe, Nevada, May, 1978.

Parry, W.H.: Cystic Fibrosis: Diagnosis and Management. Presented: 97th General Hospital, Frankfurt, Germany, May, 1978.

Parry. W.H.: The Role of Hypnosis in Asthma. Presented: Uniformed Services, University School of Medicine, Washington, D.C., September 1978.

Parry, W.H.: An Approach to Pediatric Respiratory Disease. Presented: Uniformed Services, University School of Medicine, Washington, D.C., September, 1978.

Parry, W.H.: Cystic Fibrosis: An Update. Presented: Uniformed Services, University School of Medicine, Washington, D.C., September, 1978.

Parry, W.H.: Management of Pulmonary Air Leak in the Neonate. Presented: Bethesda Medical Center, Maryland, September, 1978.

Pierce, J.: Streptococcal Sudden Unexpected Death Syndrome. Presented: Aspen Conference on Perinatal Research, Aspen, Colorado, July, 1978.

Sanders, J.M.: Workshop on Rape. Presented: National Conference on Child Abuse, San Antonio, Texas, January, 1978.

Sanders, J.M.: Psychosocial Growth and Development in Adolescence. Presented: Union College, Denver, Colorado, March, 1978.

Sanders, J.M.: Adolescent Gynecology. Presented: Sponsored by the University of Colorado Medical Center, Estes Park, Colorado, June, 1978.

Shira, J.E.: Assessment of the Allergic Child: Skin Testing - for Whom: Kodachrome Clinic. Presented: Brooke Army Medical Center, San Antonio, Texas, November, 1977.

Shira, J.E.: More History of Military Pediatrics. Presented: Uniformed Services Pediatric Seminar, San Francisco, California, March, 1978.

Shira, J.E.: Allergy Therapeutics - Facts and Fables. Presented: John Connell Lectureship, Denver General Hospital, April, 1978.

Pediatrics - continued

Shira, J.E.: Assessment of Children with Repeated Infections. Presented: Annual Meeting Colorado Chapter American Academy of Pediatrics, Denver, Colorado, May, 1978.

Shira, J.E.: Identification and Management of the Allergic Child. Presented: Annual Meeting National Association of Pediatric Nurse Assistants and Practitioners, Keystone, Colorado, June, 1978.

Wells, D.W.: Adolescent Gynecology. Presented: Continuing Medical Education Program Sponsored by the University of Colorado Medical Center, Denver, Colorado, March, 1978.

Wells, D.W.: Teenage Pregnancy. Presented: March of Dimes Conference, Denver, Colorado, May, 1978.

Yeatman, G.W.: Telephonic Triage in a Military Pediatric Practice. Presented: 13th Annual Uniformed Services Pediatric Seminar, San Francisco, California, March, 1978.

PHYSICAL MEDICINE AND REHABILITATION SERVICE

Occupational Therapy Section

deLeeuw, C.F.: Principles and Construction of Simplified Hand Splints in a Clinic Environment. Presented: Orthopedic Symposium, Quade Center, Fitzsimons Army Medical Center, Denver, Colorado, May, 1978.

DEPARTMENT OF SURGERY

Cardiothoracic Surgery Service

Barry, M.J.: Post-Operative Pericardial Tamponade. Presented: 8th Annual Meeting of the Association of Army Cardiology, Silver Springs, Maryland, May, 1978.

Plastic Surgery Service

Cullington, J.R.: A Clinical Evaluation of 3-View Audio Cine Fluoroscopy for VPI. Presented: Symposium of Military Plastic Surgeons, WRAMC, Washington, D.C., January, 1978.

Cullington, J.R.: A Clinical Evaluation of 3-View Audio Cine Fluoroscopy for VPI. Presented: Plastic Surgery Senior Residents Conference, Hershey, Pennsylvania, April, 1978.

Plastic Surgery Service - continued

Rich, J.D.: Breast Reconstruction Following Mastectomy. Presented: Symposium of Military Plastic Surgeons, WRAMC, Washington, D.C., January, 1978.

Zbylski, J.R.: Asian Travels by a Plastic Surgeon. Presented: Symposium of Military Plastic Surgeons, WRAMC, Washington, D.C., January, 1978.

Zbylski, J.R.: Modification of the Lateral Wedge Method of Reduction Mammaplasty. Presented: Rocky Mountain Association of Plastic and Reconstructive Surgeons Meeting, Hawaii, March, 1978.

Zbylski, J.R.: Modification of the Lateral Wedge Method of Reduction Mammaplasty. Presented: American Society of Aesthetic Plastic Surgery, Inc., San Francisco, California, May, 1978.

Ophthalmology Service

Cottingham, A.J.: An Analysis of the Initial 25 Intraocular Lens Implantations in an Ophthalmology Residency Training Program. Presented: Bascom Palmer Eye Institute Annual Alumni Meeting, Key Biscayne, Florida, June, 1978.

Manson, R.A.: Pediatric Ophthalmology. Presented: University of Colorado Postgraduate Medicine Course, Denver, Colorado, November, 1977.

Mears, W.W.: The Ocular Fundus in Hypertension and Diabetes Mellitus. Presented: Fitzsimons Army Medical Center Optometry Conference, September, 1978.

Urology Service

Buntley, D.W.: Iodine 125 Interstitial Brachytherapy in Adenocarcinoma of the Prostrate: Technique and Preliminary Microscopic Evaluation. Presented: Kimbrough Urological Seminar, Denver, Colorado, November, 1977.

Buntley, D.W.: Case Presentation-Duplication of Renal Collecting System Masquerading as Acute Appendicitis. Presented: South Central Section AUA Meeting, Afton, Oklahoma, October, 1977.

Dobbs, R.M.: Hypercoagulable State Induced by Estrogen Administration. Pan-Pacific Surgical Association Meeting, Honolulu, Hawaii, April, 1978.

Urology Service - continued

Fauver, H.E.: Drugs - Panacea or Pandora's Box. Presented: Kimbrough Urological Seminar, Denver, Colorado November 1977.

Fauver, H.E.: Drugs - Panacea or Pandora's Box. Presented: Annual AUA Meeting, Washington, D.C., May 1978.

Wilson, T.M.: Neuroblastoma: A Review. Presented: Kimbrough Urological Seminar, Denver, Colorado, November, 1977.

UNIT SUMMARY SHEET

UNIT SUMMARY SHEET

Clinical Investigation Program, FAMC

Clinical Investigation efforts by FAMC personnel in FY 78 culminated in the publication of 86 articles and 70 presentations and lectures at national, international, and regional scientific meetings. As of 30 September 1978, there were 131 research protocols on the CIS register. Of these 64 projects were ongoing and 67 new registrations.

Objectives:

To encourage the performance of clinically oriented research by personnel assigned to the Fitzsimons Army Medical Center (FAMC). To aid in the planning, development, support, and execution of experimental clinical studies, both in patients and by directly related laboratory work, into the clinical problems of significant concern in the health care of members of the military community. To provide physician experience in research and investigative procedures by furnishing a highly educated and trained staff of specialists, laboratory facilities, administrative services and funding for: supplies, equipment consultants, publications, and reprints. To achieve continuous improvement in the quality of patient care by providing an atmosphere of inquiry, maintaining high professional standing and accrediation of advanced health programs.

The Clinical Investigation Program differs from Medical Research and Development in that the emphasis is on the health care problems existing in our patient populations, ie; active duty, retired, and dependents and not solely on medical problems affecting combat readiness and the fighting strength. It is, by its nature, an integral part of the triad of patient care and medicine. It promotes and supports the finest ideals and traditions of Military Medicine and enhances the vitality of the teaching programs which in turn elevates the standard of medical care. The research program operates on the premise that all approved protocols will be supported to the fullest extent allowed by current funding. This concept allows for a larger number of physicians and ancillary personnel to participate in research rather than as in the grant system used elsewhere. This means that virtually every investigator is given a chance to pursue his research without having to compete for funds with "established" names in the field.

Technical Approach:

This support, direction and management is carried out under the aegis of AR 40-38, Clinical Investigation Program; AR 40-7, Use of

Investigational Drugs in Humans; AR 70-25, Use of Volunteers as Subjects in Research; AR 70-18, Laboratory Animals, Procurement, Transportation, Use, Care, and Public Affairs; and MCR 40-8, Clinical Investigation Service (CIS), FAMC. This Service provides guidance, assistance, and support to the center staff in matters pertaining to the program and coordinates the FAMC program with higher headquarters and other facilities.

Manpower: Current and authorized strength is outlined.

Description	Grade	MOS	Br	Auth	Acutal	Name
C, Clin Rsch	06	60P9B	MC	1	1	Corby
C, Immuno Sec	05	68A9A	MS	1	1	Brown
Internist	05	61F9C	MC	0	1	Charles
Lab Admin	03	68F00	MS	1	1	Marsteller
C, Surg Rsch Labs	03	64F9D	VC	1	1	Hofmann
C, Micro Sec	04	68A00	MS	1	1	Damato
Physiologist-PhD	02	68J00	MS	1	1	Harbell
Biochem	03	68C00	MS	1	1	Zolock
Microbiologist	04	68A00	MS	0	1	Quigg
NCOIC	E7	92B4R		1	1	Underhill
C, Med Lab NCO	E7	92B4R		1	1	Engle
Sr. O.R. SP	E6	91D3R		1	1	Smith, N.
Bio Sci Asst	E6	01H20		1	1	Glab

Description	Grade	MOS	Br	Auth	Actual	Name
Bio Sci Asst	E5	01H20		0	1	Andersen
Bio Sci Asst	E5	01H20		1	1	Gallegos
Bio Sci Asst	E5	01H20		1	1	Chadwick
Bio Sci Asst	E4	01H20		1	1	Harrington
Vet Sp	E6	91T2R		1	1	Rich
Microbiol-PhD	13	0403 GS		1	1	O'Barr
Microbiol	09	0403 GS		3	3	Lima
						Rothlauf
						Paine
Med Technol	09	0644 GS		1	1	Rush
Biochem	09	1320 GS		1	1	Swanson
Microbiol	07	0403 GS		6	4	Rangel
						Kile
						Morse
						LeDoux
Rsch Chem	07	1320 GS		3	3	McNamara
						Noble
						Waldeck
Bio Lab Tec	07	0404 GS		1	1	Hakes
Animal Bio Lab Tech	07	0404 GS		1	1	Jones
Animal Tech	05	0404 GS		1	1	Mercill
Protocol Asst	06	0318 GS		1	1	McCrill
Animal Caretaker	05	7706 WG		2	2	Beltran
						Hitchcock
Clerk-Steno	04	0318 GS		1	1	Montoya

	FY 76	FY 77	FY 78
Civilian Pay	329,374	382,810	363,962
Travel	2,374	3,856	3,660
Supplies	118,687	158,153	161,431
Equipment	72,686	80,000	28,500
Contracts	17,615	20,029	16,429
Other (Military)		267,269	293,432

Progress

The 1976 HSC Manpower Survey Team (Schedule X) recognized two additional MSC, Allied Science Officer requirements for CIS:

68C00	CPT, MSC	Biochemist	Ph.D.
68J00	CPT, MSC	Physiologist	Ph.D.

During 1977, FAMC was given two officer allocations to be used specifically for the above requirements. Recruiting by CIS and the Laboatory Science Consultant, Office of The Surgeon General has led to the assignment of two Ph.D.s to these positions:

David Zolock	CPT, MSC	Ph.D.	68C00
John Harbell	1LT, MSC	Ph.D.	68J00

The requirement for an Operating Room Specialist (91D) had also been recognized by the Manpower Team. At that time it was predicated on protocol support involving large animal surgeries. Since that time the mission requirements of this Service have significantly increased in research involving small animal animals and their consequent care and handling. Because of this shift, CIS requested and received approval for a change in MOS requirements from the 91D Operating Room Specialist to Veterinary Specialist (91T). Headquarters, FAMC provided an allocation and the position has been filled.

CIS received from Health Services Command (HSC) two microbiology training positions. This program brings in a qualified aspirant at the

GS05 entrace level and upon successful completion of a rigorous training program allows for non-competitive promotion to GS07 and finally the GS09 Microbiologist journeyman level. Currently both of the assigned interns have completed the required two years. One has been non-competitively promoted to GS09 and reassigned to the Eisenhower AMC. The second intern was hired into the Mycobacteriology (TB) subsection, Microbiology Section, CIS and has become a valuable adjunct to the research effort.

Historically, Fitzsimons Army Medical Center has provided leadership in the identification and treatment of tuberculosis in the military community. In accordance with the Commanders' directive, CIS provides mycobacteriology (TB) support (processing clinical specimens and reference cultures) to the listed MEDDACS. The unique ongoing computer storage and analyses of mycobacteriologic data from tuberculin patients used for laboratory followup of specimens, quality control, and analyses of clinical data provides clinical support not found in any other USAMEDD laboratory. Additional in depth mycobacterial studies on patients, ie, serum drug levels, serum inhibition tests, identification of mycobacteria other than M. tuberculosis are also provided. MEDDACS receiving support are:

Ft Carson	Letterman AMC	Scott AFB
Ft McPherson	Tripler AMC	Air Force Bases located at:
Ft Leavenworth	Madigan AMC	Baker's Field, CA
Ft Ord		Minot, S. Dakota
Ft Riley		
Ft Sill		

In addition, TB reference laboratory support is accorded: Communicable Disease Center, Atlanta, GA., PHS, Pine Ridge Reservation, S.D.

The Surgical Research Laboratories (SRL) Section, CIS has greatly expanded its services. In addition to providing several training programs, this activity has significantly increased its capabilities to encompass two operating room facilities, upgrading of X-ray and physiological equipment. The increased surgical workloads has resulted from support given to protocols dealing with cardiovascular research, vena cava, renal transplants, vaso-vasostomy, microsurgery. The research animal support now includes a daily small animal population of approximately 700 animals, 20 large animals, and a small colony of primates.

CIS has re-submitted an urgent minor construction request for a $400,000 Animal Care Facility. This proposed vivarium has been approved by Higher Headquarters but has been scheduled for tentative construction in FY80.

The Mycobacteriology Laboratory sub-section, Microbiology Section, CIS has received College of Pathology (CAP) accreditation as an Extent Two Laboratory.

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Ongoing (U), Completed (C), or Terminated (T), Published (P) or Submitted for Publication (SP).

CLINICAL INVESTIGATION SERVICE

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DETAIL SHEETS

MEDICINE

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Tuberculosis Research Follow-up Program.

WORK UNIT NO: 67/100

PRINCIPAL INVESTIGATOR: Roald A. Nelson, COL, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To facilitate proper collection of research records of tuberculosis patients and to provide a central repository for all such records. (Procedural Guide, Number 40-957, dated 27 May 1957).

TECHNICAL APPROACH

All patients admitted to the Tuberculosis Service have research files made which include representative x-rays, clinical summaries, bacteriology printouts of smear and culture data and any other records deemed appropriate for the individual case. These files are expanded when follow-up x-rays, reports and cultural data are obtained from our own clinic follow-up or from other hospitals. The information obtained is used to analyze various aspects of clinical tuberculosis, treatment results, and specific types of tuberculosis.

Manpower (in professional man years): 0.1/yr

Funding (in thousands)	FY 77:	4.0
	FY 78:	4.0

PROGRESS

This project has to date accumulated detailed information on over 25,000 patients with tuberculosis. It is most assuredly the best file of its type in the United States and will continue to contribute significantly to future data computations and papers in the field of clinical tuberculosis.

WORK UNIT 67/100

PROGRESS - continued

The modern concepts of therapy for tuberculosis stem from data such as we have in this file. These concepts include short-term hospitalization for treatment of active tuberculosis, early discharge from follow-up after medical therapy, frequency of pleural tuberculosis in young adults with pleural effusion and positive skin tests, and the incidence of extra pulmonary tuberculosis in the population of tuberculosis infected individuals.

Publications:

(1) Christensen, W. I.: Genitourinary Tuberculosis: Review of 102 Cases. Medicine 53:377, 1974.

(2) Buchanan, B. D.: Atypical Tuberculosis Due to Type I and Type III Atypical Mycobacteria. (Submitted for Publication).

(3) Gerace, J., Nelson, R. A.: Incidence of Drugs Resistant Tuberculosis in Oriental Females Treated at Fitzsimons Army Medical Center and Scott Air Force Base Medical Center. (In preparation.)

Presentations:

(1) Christensen, W. I.: Genitourinary Tuberculosis at FAMC from 1961 to present. Presented: 25th Annual Pulmonary Disease Symposium, Fitzsimons Army Medical Center, Denver, Colorado, September 1972.

(2) Christensen, W. I.: Genitourinary Tuberculosis at FAMC from 1961 to present. Presented: Regional American College of Physicians Meeting. Colorado Springs, Colorado, January 1973.

(3) Christensen, W. I.: Genitourinary Tuberculosis at FAMC from 1961 to present. Presented: Hugh Mahon Lectureship Award Competition, Fitzsimons Army Medical Center, Denver, Colorado, May 1973 (submitted as research paper).

(4) Christensen, W. I.: Drug Resistant Tuberculosis from Vietnam. Presented: 25th Annual Pulmonary Disease Symposium, Fitzsimons Army Medical Center, Denver, Colorado, September 1972.

(5) Nelson, R. A.: Tuberculosis of the Spine (Potts' Disease). Presented J. J. Waring Chest Conference. Estes Park, Colorado, August 1974.

WORK UNIT 67/100

PROGRESS - continued

(6) Nelson, R. A.: Pleural and Lymph Node Tuberculosis: Presented at the Course Clinical Management and Control of Tuberculosis. Presented three times yearly by National Jewish Hospital, Denver, Colorado.

(7) Buchanan, B.: Atypical Tuberculosis. Presented: 28th Annual Pulmonary Disease Symposium, Fitzsimons Army Medical Center, Denver, Colorado, September 1975.

(8) Nelson, R. A.: Extra Pulmonary Tuberculosis. Presented: Fitzsimons Army Medical Center, Denver, Colorado, September 1975.

(9) Christensen, W.I.: Genitourinary Tuberculosis. Presented: At the course, Clinical Management and Control of Tuberculosis. Sponsored by National Jewish Hospital, Denver, Colorado, three times yearly.

(10) Gerace, J., Nelson, R.A., Byrd, R.: Drug Resistant Tuberculosis in Oriental Females. Presented: Annual Meeting of American Thoracic Society, San Francisco, California, May 1977.

(11) Nelson, R.A.: Extrapulmonary Tuberculosis. Presented: Walter Reed Army Medical Center Grand Rounds - 20 January 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Active Antigens in House Dust.

WORK UNIT NO.: 73/135

PRINCIPAL INVESTIGATOR: Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATOR: Harold S. Nelson, COL, MC

OBJECTIVES

To determine to what degree the reactivity of house dust extract is related to its contents of cat dander, dog dander, mite products and cotton degeneration products.

TECHNICAL APPROACH

Skin test data from over 200 patients will be analyzed for correlation between positive skin tests to house-dust, cat dander, dog dander, house dust mite and cotton antigen along with the commercial Hollister-Stier and Greer dust. The ability of cat, dog and cotton to inhibit grass specific IgE antibody as determined by RAST testing will be determined. Cross immunoelectrophoresis for antigen identification and cross immunoelectrophoresis with inhibition will be performed. The antisera for this will be raised in rabbits. Likewise, cross radioimmunoelectrophoresis will be performed in order to identify those antigens that are important in human disease.

Manpower (in professional man years): 0.2/yr

Funding (in thousands)	FY 77:	0.5
	FY 78:	0.5

PROGRESS

As of August 1978, the technique of immunoelectrophoresis has been established and the antigens evaluated. At present the ongoing

WORK UNIT NO.: 73/135

PROGRESS - continued

evaluation of cross radioimmunoelectrophoresis and inhibition of crossed immunoelectrophoresis is ongoing. RAST inhibition is scheduled to be performed in September or October of 1978. Skin test data have been collected and analyzed.

Publications and Presentations: None.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Anti-Neoplastic Therapy with L-Asparaginase (NSC-109229).

WORK UNIT NO.: 73/144

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To treat patients with acute lymphoblastic leukemia (ALL), refractory to standard chemotherapy, with L-asparaginase.

TECHNICAL APPROACH

Patients meeting selection criteria outlined were treated with L-Asparaginase as per protocol.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0.0
FY 78: 0.0

PROGRESS

The following patients have been treated with this agent during FY 78.

1) S. W. - 26 y/o with ALL failed after three different induction regimens. Received 3 doses of L-Asparaginase and Ara-C but failed to obtain a remission and expired.

2) A. B. - 3 y/o BM with ALL diagnosed September 1978, relapsed in April 1978. Now in remission after induction which included L-Asparaginase plus Vincristine, Prednisone and Adriamycin.

3) J. D. - 8 y/o WM with All diagnosed in 1974 but relapsed in May 1978 and has been re-induced with L-Asparaginase, plus Vincristine, Prednisone and Adriamycin.

WORK UNIT NO.: 73/144

Publications and Presentaitons: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Use of Daunomycin (NSC-82151) in Acute Leukemia.

WORK UNIT NO.: 73/149

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To permit use of a drug of proven efficacy in acute leukemia, but which is not yet FDA-approved.

TECHNICAL APPROACH

Patients meeting selection criteria outlined were treated with Daunomycin as per protocol.

Manpower (in professional man years): 0.2/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

The following patients have been treated with this agent during FY 78.

1) D. C. - 55 y/o AIM with acute myelomonocytic leukemia remains in complete remission after induction with Daunomycin, Ara-C, 6-TG, VCR and Prednisone.

2) L. G. - 3 y/o WF with AML diagnosed in May 1978 and induced into complete remission with Daunomycin and Ara-C; also received CNS radiation for CNS involvement; remains in probable remission.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Immuno-chemical Evaluation of Myeloproliferative and Plasmaproliferative Diseases.

WORK UNIT NO.: 74/101

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATOR: George L. Brown, LTC, MSC, Ph.D.

OBJECTIVES

To determine whether there are any disturbances of immunoglobulin production or of delayed hypersensitivity in the myeloproliferative diseases. To apply new immunochemical techniques for the characterization of monoclonal gammopathies and other dysproteinemias.

TECHNICAL APPROACH

This is an in-depth immunologic evaluation of patients with myeloproliferative and plasmaproliferative disorders.

Manpower (in professional man years): 0.5/yr

Funding (in thousands) FY 77: 3.0
FY 78: 2.0

PROGRESS

A total of 40 patients with various forms of myeloproliferative disorders were studied immunologically. No monoclonal gammopathies were recorded, serum Ig levels were within normal range. In 19 patients complement C_3 levels were decreased. In 26 subjects lymphocyte blast transformation to PHA was suppressed; in 18 patients response to pokeweed mitogen was also decreased. In some patients the non-mitogenic stimulated lymphocytes showed marked increases in thymidine uptake.

WORK UNIT 74/101

PROGRESS - continued

In 33 patients shown to have suppressed mitogenic response only 2 were found allergic by intradermal skin tests. No association between depressed lymphocyte response and chemotherapy was shown except in 6 of 8 patients with chronic myelogenous leukemia which were on cytotoxic therapy at time of study.

Publications:

(1) Brown, G.L., DiBella, N.J., and Corby, D.G.: IgE-IgM Kappa Gammopathy Associated with Lymphocytic Lymphoma. Federation Proceedings 35:438, 1976.

(2) DiBella, N.J., and Brown, G.L.: Immunologic Dysfunction in the Myeloproliferative Disorders. Cancer 42:149, 1978.

Presentations:

(1) DiBella, N.J., and Brown, G.L.: Cellular and Humoral Immunity in the Myeloproliferative Disorders. Presented: Annual Joint Meeting of the American College of Physicians and American Society of Internal Medicine, Colorado Regional Meeting, Colorado Springs, Colorado, January 15, 1976.

(2) Brown, G.L., DiBella, N.J., and Corby, D.G.: IgE-IgM Kappa Gammopathy Associated with Lymphocytic Lymphoma. Presented: Anaheim, California, April 12, 1976.

(3) DiBella, N.J., and G.L. Brown: In-depth Immunologic Evaluation of Myeloproliferative and Plasmoproliferative Disorders. Clinical Investigation Service Seminar, April 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Reactive Hypoglycemia: An Analysis of Glucose-Insulin-Glucagon Interrelationships and Counter Hormonal Regulatory Factors.

WORK UNIT NO.: 74/110

PRINCIPAL INVESTIGATOR: Fred D. Hofeldt, LTC, MC

ASSOCIATE INVESTIGATORS: Gary L. Treece, MAJ, MC
M.A. Charles, LTC, MC
T.P. O'Barr, Ph.D., DAC
A. Shackelford, DAC

OBJECTIVES

The objective of the hypoglycemic study is to continue to investigate in our large clinic population the glucose-insulin-glucagon and prolactin interrelationships and the response of counter-regulatory hormones to hypoglycemic stress. This project is a continuation of a previous project initiated in 1969 at the University of California Medical Center, Moffett Hospital, San Francisco, California.

TECHNICAL APPROACH

The clinical research protocol involves evaluation of control subjects and hypoglycemic patients to assess the interrelationships of beta cell and alpha cell responsiveness to oral and intravenous glucose administration. Based upon findings in controls and patients with disease states, a classification system has been proposed. The data have allowed for an understanding of the basic pathophysiology of reactive hypoglycemic disorders. The clinical studies are being conducted in the Department of Medicine, Endocrine Clinic, with the assistance of an assigned GS-5 to perform blood sampling and assist during the testing. During the glucose tolerance test, the patient has an indwelling catheter for frequent sampling of blood glucose, is continually monitored by a cardiac monitor system and blood glucoses are assessed immediately after sampling by the Ames Reflectance Meter. After glucose administration, blood insulins, glucagons, growth hormones, prolactins and cortisols are sampled and the values are determined by a sensitive radioimmunoassay. The procedure is designed to provide a minimum of patient inconvenience in the performance

WORK UNIT NO.: 74/110

TECHNICAL APPROACH - continued

of these well standardized procedures. Many normal individuals experience a low blood sugar state sometime after glucose administration, the clinical significance of a low blood glucose state is observed by recording appropriate adrenergic symptoms at the nadir of the glucose and determining if there is a counter hormonal responsiveness to defend the stress of a low blood glucose state. This approach allows strict definition of bona fide reactive hypoglycemia and clearly distinguishes it from the benign low blood glucose states.

Manpower (in professional man years): 2.0/yr

Funding (in thousands)		
	FY 77:	6.0
	FY 78:	8.0

PROGRESS

Approximately 500 oral glucose tolerance tests have been performed since inception of the study. The data derived from these studies have been applied to advancement of the medical understanding of reactive hypoglycemic disorders and for specific patient management. The data from 300 patients has been placed on computer tapes by a biostatistician at the University of North Dakota and is retrievable for analysis if these tapes could be adapted to the computers at Fitzsimons Army Medical Center. To continue the project, further funding along the previous guidelines is needed to continue the clinical studies in patients with disordered carbohydrate metabolism. However, additional funds will be needed for the computer expansion of this study for continued input and analysis of the data on this large group of patients. Continued consultant support to include travel, honorarium and quarters for a biostatistician is requested for the continuation of the project. Dr. George Logan, biostatistician at the University of North Dakota has done two years of data compiling on this project and is most suitable to act as consultant to the project for the conversion of the data forms as presently recorded to the Fitzsimons computers. Annually, $1000 is requested for this important upgrading of this project which has accumulated such large stores of research data. Likewise, this year a new Harvard infusion pump is needed ($1345.00).

Publications:

(1) Hofeldt, F.D., Dippe, S., and Forsham, P.: Diagnosis and Classification of Reactive Hypoglycemia Based on Hormonal Changes in Response to Oral and Intravenous Glucose Administration. Am J Clin Nutrition 25:1193-1202, 1972.

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Publications - continued

(2) Hagler, L., Hofeldt, F.D., Lufkin, E.G., Herman, R.H.: Reactive Hypoglycemia: A Clinical-Physiologic Approach to Diagnosis and Treatment. Rocky Mountain Medical Journal 70:41, 1973.

(3) Anthony, D., Dippe, S., Hofeldt, F.D., Davis, J.W., Forsham, P.H.: Personality Disorder and Reactive Hypoglycemia: A Quantitative Study. Diabetes 22:664, 1973.

(4) Hofeldt, F.D., Dippe, S., Levin, S.R., Karam, J.H., Blum, R., Forsham, P.H.: Studies on the Effects of Dipheylhydantoin upon Insulin Secretion in Three Patients with Insulinoma. Diabetes 23:192-198, 1974.

(5) Hofeldt, F.D., Lufkin, E.G., Hagler, L., Block, M.B., Dippe, S., Davis, J.W., Levin, S., Forsham, P.H., Herman, R.H.: Are Abnormalities in Insulin Secretion Responsible for Reactive Hypoglycemia. Diabetes 23:589, 1974.

(6) Block, M.B., Hofeldt, F.D.: C-Peptide Measurements: Clinical Implications. Arizona Medicine 32:22-24, 1975.

(7) Hofeldt, F.D.: Potpourri: Comments on the Spectrum and Natural History of Diabetes Mellitus. Arizona Medicine 32:422-424, 1975.

(8) Hofeldt, F.D., Adler, R.A., Herman, R.H.: Postprandial Hypoglycemia Fact or Fiction. JAMA 233:1309, 1975.

(9) Hofeldt, F.D.: Progress in Endocrinology and Metabolism: Reactive Hypoglycemia. Metabolism 24:1193, 1975.

(10) Hofeldt, F.D., Lufkin, E.G., Hall, S., Dippe, S., Davis, J.W., Levin, S., Forsham, P.H.: Alimentary Reactive Hypoglycemia: Effects of DBI and Dilantin® on Insulin Secretion. Military Medicine 140:841, 1975.

(11) Block, M.B., Hofeldt, F.D., Lufkin, E.G., Hagler, L., Herman, R.H.: The Response of Glucagon-Like Immunoreactivity to Reactive Hypoglycemia. Military Medicine 142:32, 1977.

(12) Taunton, O.D., Greene, H.L., Stifel, F.B., Hofeldt, F.D., Lufkin, E.G., Hagler, L., Herman, Y. and Herman, R.H.: Fructose 1-6 diphosphatase Dificiency, Hypoglycemia and Response to Folate Therapy in a Mother and her Daughter. Biochemical Medicine

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Publications - continued

(Published Abstracts):

(1) Block, M.B., Hofeldt, F.D., Lufkin, E., Hagler, L., Herman, R.: Stimulation of Pancreatic Glucagon-Like Immunoreactivity (GLI) by Reactive Hypoglycemia. Diabetes 22:303, 1973.

(2) Hofeldt, F.D., Lufkin, E., Hagler, L., Block, M., et al: Is Delayed Insulin Secretion Responsible for Reactive Hypoglycemia? Diabetes 22:304, 1973.

(3) Hofeldt, F.D., Dippe, S., Forsham, P.: Diagnosis and Classification of Reactive Hypoglycemia Based on Hormonal Changes in Response to Oral and Intravenous Glucose Administration. Excerpta Medico, Endocrinology 28:577, 1973.

(4) Hofeldt, F.D., Lufkin, E.G., Hagler, L., et al: Reactive Hypoglycemia Seen Dependent on Patient Status. Diabetes Outlook 8:9, Nov/Dec 1973.

(5) Block, M.B., Hofeldt, F.D., Lufkin, E.G., et al: Glucagon Response to Hypoglycemia Tied to Symptoms - not Glucose Levels. Diabetes Outlook 9:4, Apr 1974.

(6) Hofeldt, F.D., Lufkin, E.G., Hagler, L., et al: Those with Reactive Hypoglycemia Have Delay on Excess Insulin Response. Internal Medicine News 8:35, 1975.

(7) Hofeldt, F.D., Lufkin, E.G., Hagler, L., et al: Response to Oral Glucose in Reactive Hypoglycemia Often Delayed Or Excessive. Family Practice News 5:64, 1975.

(8) Hofeldt, F.D.: Reactive Hypoglycemia. Diabetes 25:156, 1976.

(9) Hofeldt, F.D.., Dippe, S.E., Levin, S.R., et al: Effects of Diphenylhydantoin on Glucose-Induced Insulin Secretion in Three Patients with Insulinoma. Yearbook of Endocrinology 1975, p. 277.

(10) Hofeldt, F.D., Lufkin, E.G., Hagler, L., et al: Are Abnormalities in Insulin Secretion Responsible for Reactive Hypoglycemia. Yearbook of Medicine, 1976, pp. 596-597.

(11) Plymate, S.R., Hofeldt, F.D., Adler, R.A.: Determinants of Glucagon Response in Reactive Hypoglycemia. Clinical Research 25:2, 1977.

(12) Hofeldt, F.D., Charles, A., Eichner, H., et al: Absence of Hypoglycemia After a Test Meal in Patients with Idiopathic Reactive Hypoglycemia. Diabetes 27:2, 1978.

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Presentations:

(1) Hofeldt, F.D., Sussman, K.: Hypoglycemia. Presented: Department Medicine Grand Rounds, University of Colorado, Denver, Colorado, August 1972.

(2) Hofeldt, F.D.: Is Delayed Insulin Secretion Responsible for Reactive Hypoglycemia? Presented: American Diabetes Association, Chicago, Illinois, June 1973.

(3) Hofeldt, F.D.: New Approaches to the Study of Hypoglycemia. Presented: Regional Meeting for Affiliates of the American Diabetes Association, Grand Forks, North Dakota, December 1974.

(4) Hofeldt, F.D.: What's New in Diabetes? Nature and Treatment of Hypoglycemic Reactions (with comments on insulin injections). Presented: American Diabetes Association, North Dakota Affiliate, Grand Forks, North Dakota, April 1976.

(5) Hofeldt, F.D.: Disorders of Carbohydrate Metabolism. Presented: Basic Clinical Endocrinology Short Course, American College of Pathology, Denver, Colorado April 1976.

(6) Hofeldt, F.D.: The Problems of Hypoglycemia. Presented: Minnesota Academy of Family Physicians, Detroit Lakes, Minnesota, August 1976.

(7) Hofeldt, F.D.: Reactive Hypoglycemia. Presented: 1976 Symposium on Diabetes Mellitus, American Diabetes Association of Minnesota, October 1976.

(8) Hofeldt, F.D.: Hypoglycemia - Current Concepts of Diagnosis and Therapy. Presented: Diabetes Symposium, sponsored by The American Diabetes Association of Minnesota, Thief River Falls, Minnesota, March 1977.

(9) Hofeldt, F.D.: Hypoglycemic Disorders of the Endocrine Pancreas. Presented: Colorado Academy for Continuing Medical Education, Denver Colorado.

(10) Hofeldt, F.D.: Hypoglycemia: Fact or Fancy? Utah Academy of Family Practice, Salt Lake City, Utah.

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Textbooks:

(1) Hofeldt, F.D.: The Treatment of Reactive Hypoglycemia. Chapter in Conn Current Therapy, 452-455, 1977.

(2) Hofeldt, F.D.: Prevention of Reactive Hypoglycemic Disorders. Warren Green Publishers (in preparation).

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Minoxidil as an Antihypertensive in Patients Refractory to Available Medications.

WORK UNIT NO.: 75/102

PRINCIPAL INVESTIGATOR: John M. Haas, COL, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

The objective of this protocol is to provide an alternative treatment for patients whose blood pressure is refractory to available drugs or who have experienced unacceptable side effects from them. In fulfilling this purpose, the sponsor has been given three important responsibilities by the Food and Drug Administration: (1) Evidence must be provided that the patient(s) in question indeed is refractory to or experiences unacceptable side effects with standard drugs. The Initial Report Form should be completed and submitted to the sponsor before drug is shipped; (2) The clinical investigators should be (a) experienced in antihypertensive therapy, (b) familiar with the requirements and precautions associated with new drug testing, and (c) fully informed about the drug on the basis of the protocol supplements and by consultation with the research physician and other minoxidil investigators; and (3) The cases treated must be documented in regard to side effects, safety and the antihypertensive efficacy of the drug in such fashion that the sponsor and, in turn, the FDA are completely and currently involved.

TECHNICAL APPROACH

Stable investigation of the etiology of the hypertension will have been carried out prior to consideration of minoxidil. Assessment of end-organ damage will be part of the record. Behavior of the blood pressure will be documented.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0.0
FY 78: 0.0

PROGRESS

Since the last progress report, the minoxidil patient population has decreased to six patients currently under study. The attrition has

WORK UNIT NO.: 75/102

PROGRESS - continued

been due to deletion of patients because of poor compliance with the protocol. No new patients have been added to the study in the last six months. The principal investigators have left the Army (1977), and COL J.M. Haas is now the primary investigator. Sufficient clinical data has been accumulated for presentation to clinical meetings. Upjohn Pharmaceutical Company has recently updated and revised the protocol, reducing the frequency of visits and amount of laboratory data required.

Publications:

(1) Kleiner, J., Ball, J.H., and Nelson, W.A.: The Out Patient Treatment of Refractory Hypertension with Minoxidil. Abstracts. Colorado Regional ACP Meeting Rocky Mountain Medical Journal, p 534, December 1975.

(2) Earhart, R.N., Ball, J.H., Nuss, D.D., and Aeling, J.L.: Minoxidil-Induced Hypertrichosis: Treatment with Calcium Thioglycolate Depilatory. Southern Medical Journal, Vol 70, No 4, April 1977.

Presentations:

(1) Kleiner, J., Ball, J.H., and Nelson, W.A.: The Out Patient Treatment of Refractory Hypertension with Minoxidil. Regional ACP Meeting, Colorado Springs, Colorado, 15-17 January 1976.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A Comparison of the Results of Hyposensitization with Aqueous Grass Extract and Aluminum Precipitated Aqueous Extracted Grass Extract in the Treatment of Patients with Allergic Symptoms Due to Grass Allergy.

WORK UNIT NO.: 75/107

PRINCIPAL INVESTIGATOR: Harold S. Nelson, COL, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To compare the efficacy and side effects of two different types of FDA approved grass extracts.

TECHNICAL APPROACH

Alternate consenting patients requiring grass hyposensitization will receive the aqueous or the alum-precipitated extract. Their charts will be carefully monitored for incidence of local and systemic reactions, number of injections required to reach maintenance therapy. Symptoms during grass pollen exposure, and antibody changes as a result of hyposensitization will be measured.

Manpower (in professional man years): 0

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

No new patients were enrolled during FY 78. Twenty-four patients of the original study group have continued in their 4th year of observation. The results of the first three years of immunotherapy were analyzed by RAST determination of their specific IgE levels to grass. Thus far, the decline in IgE has been comparable for the two groups.

Publications and Presentations: None.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Antineoplastic Therapy with CIS-Platinum (II) Diamminechloride (NSC 119875).

WORK UNIT NO.: 75/110

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATOR: John C. Michalak, MAJ, MC

OBJECTIVES

To treat patients with advanced solid tumors, primarily testicular tumors.

TECHNICAL APPROACH

Patients meeting selection criteria outlined were treated with CIS-Platinum as per protocol.

Manpower (in professional man years): 0.1/yr

Funding (in thousands)	FY 77:	0.0
	FY 78:	0.0

PROGRESS

The following patients have been treated with this agent during FY 78.

1) S. S. - 32 y/o WM with metastatic embryonal ca. of testis, experienced continued progression of his tumor despite two doses of CPDD.

2) S. V. - 20 y/o WM with metastatic embryonal ca. who has had a complete remission on CPDD with Bleomycin and Velban and remains stable on intermittent doses of these agents.

3) J. M. - 38 y/o WF with intraperitoneal metastases of adeno ca. presumably of ovarian origin; has received one dose of CPDD; too early to evaluate for response.

WORK UNIT NO.: 75/110

PROGRESS - continued

4) S. S. - 21 y/o WM with testicular choriocarcinoma metastatic to lungs; begun on CPDD - Velban and Bleomycin after orchiectomy ; partial response to date.

5) M. E. - 19 y/o WM with choriocarcinoma with embryonal elements metastatic to lung and brain; currently has no evidence of disease; on CPDD - Velban - Bleomycin since December 1977.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Study of the Impaired Water Excretion in Primary Hypothyroidism.

WORK UNIT NO.: 75/113

PRINCIPAL INVESTIGATOR: Fred D. Hofeldt, LTC, MC

ASSOCIATE INVESTIGATORS: Gary L. Treece, MAJ, MC
M.A. Charles, LTC, MC
Paul D. Miller, MD
Robert J. Anderson, MD
Robert W. Schrier, MD
Gary Robertson, MD
Peter Steele, MD
Clifford Zwillich, MD

OBJECTIVES

The study is assessing the role of thyroid hormone in relation to the development of hyponatremia and impaired free water clearance as observed in clinical hypothyroid states.

TECHNICAL APPROACH

Before and after thyroid replacement, hypothyroid patients undergo PAH and insulin clearances, response to a water load and mannitol infusion. Blood and urine are analyzed for osmolality, electrolytes and creatinine. Plasma ADH and prolactin response to these maneuvers are also measured. Cardiac output is measured by Indium ^{131}.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

During the study period, seven patients with mild hypothyroidism and three patients with moderate to severe hypothyroidism have been studied as outlined above. All procedures have worked well without complications.

WORK UNIT NO. 75/113

PROGRESS - continued

Patients with mild hypothyroidism are able to excrete approximately 2/3 of a water load, whereas the more severely hypothyroid can only excrete about 1/4 of this. Normals and these patients after thyroid hormone replacement excrete 100% of the water load. There seems to be a change in glomerular filtration rate (GFR) causing this. This decreased GFR is not due to decreased cardiac output. Preliminary data suggest no change in ADH or prolactin accounting for the inability to excrete a water load. The data is now being compiled and analyzed and prepared for publication. It is the concensus of the investigators that the paper is most suited for the Journal of Clinical Investigation.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Fractionation of Kochia (Kochia Scoparia) Pollen with Isolation of Kochia Pollen Extract Antigens.

WORK UNIT NO.: 75/116

PRINCIPAL INVESTIGATOR: Harold S. Nelson, COL, MC

ASSOCIATE INVESTIGATORS: Mark R. Stein, LTC, MC
Thomas P. O'Barr, Ph.D., DAC

OBJECTIVES

This study is designed to extract raw kochia pollen and purify it through chemical fractionation. It will attempt to isolate antigenic molecules of significance in human allergy (to this plant).

TECHNICAL APPROACH

Raw kochia defatted pollen has been extracted in distilled water and aliquots separated. This material has been used to immunize rabbits emulsified in Freund's complete adjuvant, and rabbit antisera have been obtained. Allergic human sera are currently available at -70°C. Kochia discs will be used in the direct RAST to determine which human sera will be pooled and in the indirect RAST to determine antigenic activity of isolated kochia fractions. Macaque monkeys will also be used by pca to test the extract potency.

Manpower (in professional man years): 0.0

Funding (in thousands) FY 77: 1.0
FY 78: 1.0

PROGRESS

No progress occurred during this year because of the departure of the principal investigator. It is anticipated that a new principal investigator will undertake this project in FY 79.

Publications and Presentations: None.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A Study of the Stability of Allergy Extracts Under Varying Conditions.

WORK UNIT NO.: 75/118

PRINCIPAL INVESTIGATOR: Harold S. Nelson, COL, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To systematically explore the effects of several stabilizers on the loss of potency of allergy extracts at different concentrations, volumes and time intervals.

TECHNICAL APPROACH

Varying dilutions of Russian thistle allergy extract will be prepared from identical freeze-dried lots. These will be stabilized with varying concentrations of human-serum albumin or tween or glycerine or no stabilizaing agent. They will be placed in both siliconized and plain vials. New dilutions will be set up periodically during the course of a year and at the end of one year's time, the continuing potency of the extracts will be compared using skin testing in human volunteers and RAST inhibition curves.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 77: 1.0
FY 78: 1.0

PROGRESS

The original extracts were analyzed in May and June 1977 for residual activity, as compared to fresh dilutions from the same freeze dried extract. Testing was done by RAST inhibition. The results were presented at the Annual Meeting of the American Academy of Allergy.

WORK UNIT NO.: 75/118

PROGRESS - continued

On the basis of the results, a new series of extracts were reconstituted to explore specifically whether the effects of 10% glycerin and .03% Human serum albumin were additive and also, whether multiple allergens in the same vial were protective of each other. In addition, further vials were set up to continue the exploration of the effects of temperature and volume on extract stability. These results will be analyzed in October, 1979.

Publications:

1. H.S. Nelson: The Effect of Preservatives and Dilution on the Deterioration of a Pollen Extract-Russian Thistle (Salsola Pestifer). Submitted or publication in the J. Allergy & Clinical Immunol.

Presentations:

H.S. Nelson: The Effect of Preservatives and Dilution on the Deterioration of a Pollen Extract-Russian Thistle (Salsola Pestifer). Presented, Annual Meeting of the American Academy of Allergy, Phoenix, Arizona, March, 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A New Measure of Anatomic Dead Space During Steady State Studies: Theory - Component Design.

WORK UNIT NO.: 76/100

PRINCIPAL INVESTIGATOR: Michael E. Perry, LTC, MC

ASSOCIATE INVESTIGATOR: Neal B. Kindig, Ph.D.

OBJECTIVES

To develop a method to measure anatomic dead space during steady state diffusing capacity studies. To develop a valve to be used in the measure of anatomic dead space during steady state diffusing capacity studies.

TECHNICAL APPROACH

Using the theory of the experiment already developed by the use of digital computer analysis and simulation and using the six port rotary valve designed specifically for this protocol, an antomatic dead space will be measured on a group of normal volunteers. This data will be compared with anatomic dead space as measured by the Fowler technique. If correlation occurs, then further modification of the rotary valve will be made to allow for automatic operation during diffusion studies.

Manpower (in professional man years): 0.1/yr

Funding (in thousands)		
	FY 77:	5.0
	FY 78:	5.0

PROGRESS

A manually operated rotary valve was completed and used for preliminary dead space studies. This proved to be more satisfactory than the solenoid valve system because of the uniform dead space in different valve positions, the regular flow patterns, and a silent operation. The main disadvantage of this approach is slower switching

WORK UNIT NO.: 76/100

PROGRESS - continued

between valve positions. Preliminary design work has been started to drive this valve automatically, with a stepping motor or a DC pancake motor. Clinically, it is impractical to maintain constant tidal volume during the dead space test as required to produce manageable errors under this protocol. Therefore, preliminary theory was developed to allow the use of a test gas plus a reference gas to eliminate the need for breath-to-breath constancy of tidal volume. Preliminary data utilizing this new technique is extremely encouraging.

Publications:

(1) Kindig, N.B., Hazlett, D.R.: A Precision measure of anatomic dead space: Theory. Ann Biomed Engineer 6:33-47, 1978.

(2) Kindig, N.B., Hazlett, D.R.: Alveolar Air Equations Modified for Breathing Pattern. Federation Proceedings 37:867, 1978.

(3) Kindig, N.B., Hazlett, D.R.: An Integral Form Solution of a CO Gas Transport Equations. Biomedical Sciences Instrumentation 14:151-155, 1978.

(4) Kindig, N.B., Zimmerer, R.W., Hazlett, D.R.: Computer Simulation. Clinical Engineering (in press).

(5) Kindig, N.B., Hazlett, D.R., Filley, G.F.: Timing and Volume Averaging in Single Breath DLCO Measurements. The Physiologist, (in press).

Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Trial of Lithium Carbonate to Prevent or Reduce Neutropenia In Rats Receiving Radiation.

WORK UNIT NO.: 76/101

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATORS: Donald G. Corby, COL, MC
W. Nicholas Glab, SP6, B.S.
Donald B. Mercill, DAC, B.S.

OBJECTIVES

To determine the efficacy of lithium carbonate in preventing or reducing the neutropenia due to myelotoxic irradiation.

TECHNICAL APPROACH

Rats are dosed by oral feeding tube and sacrificed at intervals for bone marrow, complete blood count with differential, colony stimulating factor, and lithium blood levels. Radiation was given at 250 rads of whole body irradiation to random animals on day 21 of lithium dosage.

Manpower (in professional man years): 0.2/yr

Funding (in thousands) FY 77: 1.5
FY 78: 0.0

PROGRESS

Rats have blood values inconsistent with serving as a model for humans. Therefore, this protocol has been rewritten for dogs and has been re-submitted and approved as work unit number 78/103.

Publications and Presentations: None

STATUS:

Terminated.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Anti-neoplastic Therapy with Methyl CCNU (NSC95441)/1-(2-Chloroethyl)-3-(4-Methyl Cyclohexyl)-1-Nitrosourea.

WORK UNIT NO.: 76/102

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To treat patients with inoperable, recurrent or disseminated colorectal carcinoma with MeCCNU.

TECHNICAL APPROACH

Patients meeting selection criteria outlined were treated with MeCCNU as per protocol.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

The following patients have been entered into this protocol.

(1) M. B. - 45 y/o WF with adeno ca. of the colon metastatic to the lung: progressive disease despite two courses of Me CCNU plus 5FU.

(2) F. G. - 55 y/o WM with diffuse intra-abdominal adeno ca. of sigmoid adeno ca.; stable on Me CCNU plus 5FU.

(3) A. T. - 50 y/o WF with adeno ca. of colon metastatic to portal nodes; condition stable on weekly 5FU but patient requested that Me CCNU be discontinued due to GI toxicity after two doses of Me CCNU.

WORK UNIT NO.: 76/102

PROGRESS - continued

(4) D. M. - 64 y/o BF with adeno ca. of colon metastatic to liver, failed to respond to Me CCNU plus 5FU despite six courses of therapy; complicated by thrombocytopenia.

(5) D. M. - 58 y/o WM with adeno ca. of colon metastatic to liver, is clinically stable and symptomatically controlled with Me CCNU plus 5FU since January 1977; moderate thrombopenia and anemia.

(6) W. L. - 57 y/o WM with metastatic rectal adeno ca., experienced a partial response to 5FU and Me CCNU lasting approximately two months; dead of prgressive disease.

(7) M. M. - 52 y/o WF with adeno ca. of colon metastatic to porta hepotis and left supraclavicular lymph node; remains in clinical remission, off of Me CCNU and 5FU since September 1977 after 2 1/2 years of therapy; chronic thrombocytopenia has resulted but patient otherwise doing well.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: An Objective Measure of CNS Development in Children.

WORK UNIT NO.: 76/103

PRINCIPAL INVESTIGATORS: R. John Morgan, Ph.D. (CSU, CO)
John H. Buscemi, LTC, MC

ASSOCIATE INVESTIGATORS: John W. Steadman, Ph.D. (CSU, CO)
C. Norman Rhodine, Ph.D. (CSU, CO)
Paul W. Daugherty, B.S. (CSU, CO)
James W. Howell, B.S. (CSU, CO)

OBJECTIVES

A long-term goal of the proposed research is to develop a clinical method of assessing central nervous system (CNS) development in children too young to be tested using behavioral methods. Early diagnosis of abnormal CNS development is of paramount importance in early institution of therapy which influences the prognosis. Such early diagnosis is not possible using testing methods which require verbal or written communication skills.

TECHNICAL APPROACH

The proposed research will develop a quantitative method of assessing CNS development and the data base for normal subjects. Abnormal development of the CNS, such as mental retardation, will be the subject of a later research. This study is designed to find parameters of the Electroencephalogram (EEG) which will be reliable quantitative measures of CNS development and establish the normal range of these parameters. The variation of these parameters with age in normal children will be established and statistically tested for significance.

Manpower (in professional man years): 0.4/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Eighty-seven patients have been investigated. Data evaluation has not been completed at this time. A total of 250 patients will be investigated prior to conclusive data evaluation.

WORK UNIT NO.: 76/103

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Clinical Trial of Lithium Carbonate to Prevent or Reverse Neutropenia.

WORK UNIT NO.: 76/104

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To determine the efficacy of lithium carbonate in preventing or reversing neutropenia induced by chemotherapy or reversing chronic neutropenic states.

TECHNICAL APPROACH

Lithium carbonate will be given to patients with chronic neutropenia, after a minimum of 3 weeks baseline observation, to determine whether it can raise the total granulocyte count. It will also be given to patients receiving cyclic chemotherapy to determine if it can diminish the fall (nadir) in granulocyte level following the chemotherapy.

Manpower (in professional man years): 0.1/yr

Funding (in thousands)	FY 77:	0
	FY 78:	0

PROGRESS

No further patients have been placed on this study and it will be closed. Request that FDA be notified of this closure. This decision is based on recent reports in the literature which have documented that lithium carbonate does diminish the marrow-toxicity of myelosuppressive therapy in selected patients.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of Testicular Function in Patients Receiving Cytotoxic Therapy.

WORK UNIT NO.: 76/105

PRINCIPAL INVESTIGATOR: Gary L. Treece, MAJ, MC

ASSOCIATE INVESTIGATOR: Nicholas J. DiBella, LTC, MC

OBJECTIVES

To determine if there are abnormalities in testicular function resulting from cytotoxic therapy. To determine whether correction of such hormone deficiencies is beneficial to the patients, particularly by improving their bone marrow function or other testosterone related parameters such as muscle strength, weight gain, etc.

TECHNICAL APPROACH

The patient population under study is that of male patients over the age of 18 years with proven malignancy who are undergoing chemotherapy. To be included in the study the patients must have an expected survival of at least three months, sign a Volunteer Agreement form and be receiving any single cytotoxic agent or combination of such agents. Patients who have received pelvic irradiation or who have undergone bilateral orchidectomy or who have had known diseases of the testes prior to the institution of therapy will be excluded from the study.

Prior to therapy each patient will have a LH, FSH, testosterone and estradiol drawn and a semen analysis obtained. Sexual history will also be monitored in the form of a questionnaire. Patients with decreased testosterone or increased LH will be treated with 200 mg of testosterone enanthate IM every two weeks. All patients will continue to have endocrine studies drawn and questionnaires filled out during their chemotherapy.

Manpower (in professional man years): 0

Funding (in thousands) FY 77: 0
FY 78: 0

WORK UNIT NO.: 76/105

PROGRESS

No progress on this protocol was made during the past year. It is hoped that some progress can be seen during the next year.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: An Evaluation of Nasal Secretory IgE.

WORK UNIT NO.: 76/109

PRINCIPAL INVESTIGATOR: Bruce Martin, MAJ, MC, USAF

ASSOCIATE INVESTIGATOR: Harold S. Nelson, COL, MC
John McDonnell, MAJ, MC

OBJECTIVES

To determine whether a localized secretory IgE response can occur to selected aero allergens in the absence of cutaneous mass cell sensitization and to determine whether this is associated with nasal mass cell sensitivity to these antigens.

TECHNICAL APPROACH

Patients who present to the allergy clinic with a seasonal history of allergic rhinitis but with negative tests to the suggested aero allergens will be the principal subjects for investigation, in addition there will be positive and negative control groups. All groups will be studied by skin testing, serum RAST for the suspected aero allergens, nasal RAST for the suspected aero allergens and nasal antigen challenge.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 77: 1.0
FY 78: 0.5

PROGRESS

The original approach for obtaining nasal secretions prove to be ineffective, therefore, the patients were all repeated using a technique of nasal lavage. The data was then analyzed and submitted by Dr. McDonnell to the Hugh Mahan Competition. Subsequently, it

WORK UNIT NO.: 76/109

PROGRESS - continued

was felt that the effect of seasonal variation in nasal secretions should be determined, therefore, Dr. Bruce Martin, MAJ, MC, USAF, has taken over the protocol and plans to restudy the positive controls and the subjects during their period of increased symptoms in the summer of 1978 and again in the fall when their symptoms have subsided. Performing at each of these times, nasal wash for RAST and serum RAST.

Publications and Presentations: None.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A Study of Terbutaline and Aerosol in the Treatment of Patients with Bronchial Asthma.

WORK UNIT NO.: 76/110

PRINCIPAL INVESTIGATOR: Harold S. Nelson, COL, MC

ASSOCIATE INVESTIGATOR: Richard W. Weber, LTC, MC

OBJECTIVES

The purpose of this protocol was to determine dose responses to areosolized terbutaline. This served as a preliminary study to work unit 77/113.

TECHNICAL APPROACH

Patients received doses of aerosolized terbutaline at 20 minute intervals administered by pressure nebulization or alternately by intermittent positive pressure breathing. A maximum dose of 9mg was administered unless side effects supervened.

Manpower (in professional man years): 0.1/yr

Funding (in thousands)	FY 77:	0
	FY 78:	0

PROGRESS

Ten patients were studied employing the two methods of administration.

Publications:

(1) Weber, R.W., Nelson, H.S., Petty, W.E.: Dose Response to Aerosolized Terbutaline in Asthmatics: Comparison of Vehicle of Administration. (Abstract) The Am Rev Respiratory Dis, vol 115, part 2, no. 2, p. 78, April 1977.

(2) Weber, R.W., Petty, W.E., Nelson, H.S.: Aerosolized Terbutaline in Asthmatics. Comparison of Dosage, Strength, Schedule and Method of Administration. Submitted for publication, J. Allergy and Clinical Immunology.

WORK UNIT NO.: 76/110

Presentations: None.

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Study of the Effect of Ibuprofen (Motrin) on Platelets in Normal Subjects.

WORK UNIT NO.: 76/111

PRINCIPAL INVESTIGATOR: John C. Michalak, MAJ, MC

ASSOCIATE INVESTIGATORS: Robert Claypool, LTC, MC
Judy Barber, GS-9, DAC
Pat Rush, GS-9, DAC

OBJECTIVES

To determine the effect of Ibuprofen on the platelets of a control group of patients who do not have inflammatory joint disease and who are on no other medications.

TECHNICAL APPROACH

Baseline coagulation studies including bleeding time, protime, partial thromboplastin time, platelet count, platelet adhesivity, platelet aggregation with epinephrine, thrombin, collagen, ADP and ristocetin were obtained on 20 normal individuals following informed consent. Repeat studies were done at 24 hrs, 7 days and 8 days to determine if and how long Ibuprofen affected platelet function.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0.0
FY 78: 0.0

PROGRESS

No further work has been done on the Motrin protocol. The initial study was inadequate due to difficulties with the aggregometer and patient compliance which was primarily secondary to the ingestion of antihistamines and alcohol which affect baseline platelet studies. If endoperoxide assays were ready, the study would be more meaningful and would be restarted.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Study of the Effect of Tetracycline and Pleural Drainage on Pleural Effusion in Cancer Patients.

WORK UNIT NO.: 76/112

PRINCIPAL INVESTIGATOR: John C. Michalak, MAJ, MC

ASSOCIATE INVESTIGATORS: Michael Barry, LTC, MC
Michael Langin, CPT, MSC
Antti G. Maran, MAJ, MC

OBJECTIVES

To determine in a prospective, randomized, double-blind fashion if pleural drainage and tetracycline are better than pleural drainage alone in the treatment of pleural effusion in cancer patients.

TECHNICAL APPROACH

Patients with biopsy-proven malignancy with malignant infusion are being randomized to closed chest tube drainage alone or closed chest tube drainage with tetracycline. This is being done in a double-blind manner by the Pharmacy Service so ward physicians do not know if the patient is given tetracycline or the vitamin solution which looks the same as tetracycline.

Manpower (in professional man years): 0.0

Funding (in thousands) FY 77: 0.0
FY 78: 0.0

PROGRESS

Presently twenty-one patients have been placed on the study. The code has not yet been broken so it is yet uncertain which patients have been treated with closed chest tube drainage alone or closed chest tube drainage with tetracycline.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Chemoimmunotherapy of Malignant Melanoma.

WORK UNIT NO.: 76/115

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To test the efficacy of BCG and BCG plus DTIC in malignant melanoma.

TECHNICAL APPROACH

Stage I - BCG by scarification weekly for 3 months, then every other week for 21 months.

Stages II & III - DTIC every 21 days with BCG on days 7, 12 and 17 of a 21 day cycle.

Manpower (in professional man years): 0.3/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

The following patients have been entered into this protocol.

(1) D. W. - 55 y/o WF with Clark's level III without metastases to nodes who remains free of disease on weekly BCG since October 1977.

(2) J. H. - 56 y/o WM with recurrent melanoma on BCG and DTIC since February 1978, remains clinically well although a defect in the spleen on liver-spleen scan is being monitored.

(3) G. M. - 34 y/o WF with Clark's level V without metastases, continues on BCG since November 1976 without evidence of tumor recurrence.

WORK UNIT NO.: 76/115

PROGRESS - continued

(4) N. M. - 54 y/o WF with (non-metastatic) Clark's level III-IV melanoma has been on BCG since April 1977 without evidence of tumor recurrence.

(5) W. K. - 58 y/o WM with probable metastatic melanoma to skin of mid-back begun on BCG in June 1978; no evidence of tumor recurrence.

(6) K. B. - 30 y/o WM with non-metastatic superficial-spreading Clark's level III melanoma on BCG since April 1977 without evidence of tumor recurrence.

(7) J. B. - 62 y/o WM with melanoma metastatic to axillary nodes, remains free of disease recurrence on BCG and DTIC since February 1977.

(8) E. T. - 32 y/o WM with metastatic melanoma to lungs being treated with BCG and DTIC, has had tumor progression on therapy.

(9) M. W. - 35 y/o WM with non-metastatic Clark's level IV melanoma on BCG by scarification since November 1977; no evidence of recurrence.

(10) K. B. - 30 y/o WM with Clark's level III superficial spreading non-metastatic melanoma, has been on BCG by scarification since April 1977 without evidence of recurrence.

(11) N. M. - 54 y/o WF with Clark's level III non-metastatic melanoma, has been on BCG by scarification since April 1977 without evidence of recurrence.

(12) Tom R. - 3 local recurrences over previous primary site after adjuvant BCG with DTIC, ActD, VCR, Piocarbazine (Bethesda protocol) since the local recurrences have been surgically removed and PT is now off protocol.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Effect of Dexamethasone on Gonadotropins in Post-Menopausal Women.

WORK UNIT NO.: 76/116

PRINCIPAL INVESTIGATOR: Gary L. Treece, MAJ, MC

ASSOCIATE INVESTIGATOR: Leonard Dodson, MAJ, MC

OBJECTIVES

To clarify the mechanism whereby glucocorticoids may interfere with gonadotropin secretion or release in post menopausal women. This is of interest because of the high frequency of gonadal dysfunction in patients, male and female with endogenous as well as exogenous Cushing's syndrome.

TECHNICAL APPROACH

The patient population to be studied are healthy post menopausal women on no medications. A post menopausal woman will be defined as any woman with elevated plasma gonadotropin levels as a result of physiologic ovarian failure or with prior surgical extirpation of the ovaries. A baseline 0800 plasma FSH, LH, cortisol and prolactin levels will be drawn on two consecutive days prior to the subjects taking 2mg qid po of Dexamethasone on three consecutive days. A.M. FSH, LH, cortisol and prolactin levels will be obtained daily during the Dexamethasone treatment. In order to define the site of the anticipated Dexamethasone suppression of the gonadotropins an LH-RH infusion test will be performed by giving a single IV bolus of 100ug of LH-RH on the day prior to and on the third Dexamethasone treatment day. Blood for FSH and LH, cortisol and prolaction will be drawn at -15, 0, 15, 30, 45, 60, 90 and 120 minutes after LH-RH injection.

Manpower (in professional man years): 0.5/yr

Funding (in thousands) FY 77: 0
FY 78: 2.0

WORK UNIT NO.: 76/116

PROGRESS

The results of data obtained from six subjects who have completed all or part of the protocol are reported. The mean LH basally and the mean peak LH post LH-RH before Dexamethasone were respectively 91.0 and 297.7 mIU/ml (n-4). The same values after Dexamethasone were 95.7 and 280 mIU/ml. The corresponding values for FSH were 199 and 300.8 mIU/ml and 190.0 and 300.3 mIU/ml.

Surprisingly, LH-RH stimulated prolactin levels in 5 of 6 patients (including one pre-menopausal woman). Basal mean prolactin level before LH-RH and Dexamethasone was 8.63 + 0.83 ng/ml. Post LH-RH the level was 23.13 $\pm$ 1.37 ($p < 0.05$) (n=6). The corresponding values post Dexamethasone were 9.85 and 23.2 ng/ml (n=4).

The results suggest that the Dexamethasone protocol used has no effect on basal or post LH-RH gonadotropin levels. However, it seems evident that LH-RH stimulates prolactin secretion, a finding not previously reported. Dexamethasone has no effect on this response.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A Non-Invasive Plethysmographic Measure of Transthoracic Pressure During Maximal Expiratory Maneuvers.

WORK UNIT NO.: 76/117

PRINCIPAL INVESTIGATOR: Michael E. Perry, LTC, MC

ASSOCIATE INVESTIGATOR: Robert W. Zimmerer, Ph.D.

OBJECTIVES

To develop a Non-Invasive Plethysmographic method to measure Transthoracic Pressure during maximal expiratory maneuvers.

TECHNICAL APPROACH

Ten adult volunteers drawn from military and civilian staff assigned to the Pulmonary Function Laboratory will be the test population. Each individual will be subjected to Spirometry, Frequency Dependence of Functional Residual Capacity, Flow Volume Loops, Compartment Studies, Frequency Dependence of Compliance, and to Forced Vital Capacity maneuvers in the Body Plethysmograph.

Manpower (in professional man years): 0.4/yrs

Funding (in thousands)		
	FY 77:	5.0
	FY 78:	5.0

PROGRESS

The use of esophageal balloon catheters to measure alveolar air pressures showed great sensitivity to placement and inflation, making interpretation of pressure response during exhalation inconclusive. Several types of heated pneumotachs were evaluated, and it was found that the theoretical improvement in flow measurement was more than offset by the degregation in box pressure measurement caused by the uneven heat flux from the pneumotach, which heated the box to such an extent that the minute pressure changes corresponding to the lung

WORK UNIT NO.: 76/117

PROGRESS - continued

compression were overwhelmed. The best results were obtained with an unheated pneumotach with proper calibration of system response. Sufficient data has been collected to conclude that airways resistance is constant over the greater part of the vital capacity during minimally forced expiration.

Publications: None

Presentations:

(1) Zimmerer, R.W., Hazlett, D.R.: Whole Body Plethysmographic Monitoring of Airway Dynamics During Maximal Exhalation. Presented: American Association for Medical Instrumentation, San Francisco, California, March 1977.

(2) Zimmerer, R.W., Perry, M.E., Hazlett, D.R.: Airway Resistance and Alveolar Pressure Measurement. To be Presented: 31st Annual Confernece of Engineering in Medicine and Biology, Atlanta, October 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of the Effects of the Frequency of Pollen Allergin Injections During the Pollen Season.

WORK UNIT NO.: 77/101

PRINCIPAL INVESTIGATOR: Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATORS: William R. Tipton, LTC, MC
Harold S. Nelson, COL, MC

OBJECTIVES

In this investigation we hope to discover what the effect the frequency of hyposensitization injection will have in patients on maintenance level of immunotherapy during the pollen season for which they are receiving the immunotherapy.

TECHNICAL APPROACH

Two groups of patients on maintenance immunotherapy will be compared, one receiving weekly immunotherapy, the other receiving bi-weekly immunotherapy in a blinded fashion. Symptom score sheets will be completed for the course of this weed season. Nasal provocation and serum studies for levels of specific IG antibodies will be completed pre-seasonally, mid-seasonally and after the season.

Manpower (in professional man years): 0.3/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Research project 77/101 has been incorporated and expanded into research project 78/106.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Comparison of the Clinical and Immunological Response of Pre-Seasonal and Co-Seasonal vs. Post-Seasonal Initiation of Allergy Immunotherapy.

WORK UNIT NO.: 77/103

PRINCIPAL INVESTIGATOR: Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATORS: William R. Tipton, LTC, MC
Harold S. Nelson, COL, MC

OBJECTIVES

To investigate in patients who present to the allergy clinic just prior to or during their symptomatic pollen season, whether it is advantageous to begin immunotherapy at that time or postpone the initiation of specific treatment until a specified period following the end of the pollen season.

TECHNICAL APPROACH

Fifteen pairs of relatively well matched new patients presenting to the allergy clinic at FAMC will undergo the usual allergy evaluation. One group of patients will have allergy immunotherapy delayed until after the season of the specific pollen has passed, with the initiation of therapy beginning one month at the end of the season, the other group will begin their allergy immunotherapy at the time the person is evaluated and within two months of the specific pollen season. A blood sample and nasal provocation testing and nasal rast testing will be performed upon initial evaluation. These procedures will be repeated just prior to the next season and immediately after the first and second pollen seasons. Patients will keep a symptom score diary during both pollen seasons.

Manpower (in professional man years): 0.0/yr

Funding (in thousands): FY 77: 0
FY 78: 0

PROGRESS

This study was not undertaken as we were not able to gather thirty suitable patients. The study will be attempted in the spring of 1979.

WORK UNIT NO.: 77/103

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of Immunoglobulins and Immunoglobulin Bearing Lymphocytes in Asthma.

WORK UNIT NO.: 77/104

PRINCIPAL INVESTIGATOR: Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATORS: Craig Jacobson, CPT, MC
Harold S. Nelson, COL, MC

OBJECTIVES

To determine whether patients with bronchial asthma have mean immunoglobulin levels which are lower than normal for their age or have abnormalities of lymphocytes as determined by surface markers.

TECHNICAL APPROACH

All asthmatic patients seen in our Clinic as much as possible were evaluated by means of a data sheet and had sera drawn for immunoglobulin studies. A portion of this group will be recalled and have appropriate studies and have blood drawn for lymphocyte markers.

Manpower (in professional years): 0.02/yr

Funding (in thousands) FY 77 2.5
FY 78: 0

PROGRESS

One-hundred-fifty patients have been entered into the study. The study is in the final stage of completion with the analysis of data.

Publications and Presentations: None.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: An Evaluation of Cross Allergenicity Among Pollen Extracts of Members of Chenopodiaceae and Amaranthaceae.

WORK UNIT NO: 77/105

PRINCIPAL INVESTIGATOR: Richard W. Weber, LTC, MC

ASSOCIATE INVESTIGATOR: Harold S. Nelson, COL, MC

OBJECTIVES

To evaluate the cross allergenicity between pollens of the weed families Chenopodiaceae and Amaranthaceae, and to ascertain whether sensitivity to select members of these families can be distinguished or whether cross-reactivity with strong allergens abrogates such a discrimination.

TECHNICAL APPROACH

Twelve members of Chenopod-Amaranth families will be studied. Rabbit antisera will be raised to each weed extract and studied with Ouchterlony immunodiffusion and inhibition of passive hemagglutination. Sera collected from patients with positive skin tests will be used for RAST inhibition studies.

Manpower (in professional man years):		0.5/yr
Funding (in thousands)	FY 77:	1.0
	FY 78:	1.0

PROGRESS

Rabbit antisera have been raised to all 12 members of the Chenopod-Amaranth family. Ouchterlony analysis has been performed of all 12 antisera against the 12 extracts. RAST inhibition has been performed using Lamb's quarters and Russian thistle discs and the other 12 extracts as inhibitors against a pool of allergic sera. Passive hemagglutination inhibition has also been performed against the rabbit antisera.

Publications: The material was submitted to the 1978 Hugh Mahon Lectureship Award Competition where it was awarded second prize.

WORK UNIT NO.: 77/105

Presentations: None.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Effect of Chronic Non-Immunologically Mediated Bronchial Constriction of Bronchial Smooth Muscle.

WORK UNIT NO.: 77/106

PRINCIPAL INVESTIGATOR: Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATORS: William N. Glab, SP6
John Hofmann, CPT, VC

OBJECTIVES

To determine if the hyperactivity or constriction of the bronchial smooth muscle in asthmatic patients is the cause of the bronchial smooth muscle hypertrophy found in the asthmatic lung; and secondly, to determine if bronchodilators as presently used have any protective effect against this hypertrophy.

TECHNICAL APPROACH

Guinea pigs will be subjected to non antigen mediated bronchoconstriction from the age of weaning to sexual maturity. Pulmonary functions and histological data will be obtained in depth as the guinea pigs are sacrificed.

Manpower (in professional man years): 0.0/yr

Funding (in thousands) FY 77: 1.2
FY 78: 1.5

PROGRESS

A negative report is submitted since no work has been done on this project to date. This study will not begin until later in the calendar year 1978.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: L-Dopa Stimulation of Glucagon in Obesity.

WORK UNIT NO.: 77/107

PRINCIPAL INVESTIGATOR: Gary L. Treece, MAJ, MC

ASSOCIATE INVESTIGATOR: None.

OBJECTIVES

It has been suggested that obese subjects have a deficiency of glucagon reserve. L-Dopa is known to cause a rise in glucagon levels in normal weight subjects. This study was designed to observe the effect of L-Dopa on serum glucagon levels in obese subjects compared to normal weighted controls.

TECHNICAL APPROACH

The patient populations to be studied include 10 normal weight, non-diabetic subjects; 10 obese, non-diabetic subjects and 10 obese, diabetic subjects. In the latter group, subjects taking insulin and/or oral hypoglycemic agents will be excluded from the study. Diabetic subjects will be defined on the basis of a standard 3-hr glucose tolerance test. Subjects with a history of cardiovascular disease, glaucoma, melanoma, peptic ulcer disease, psychosis, and patients taking MAO inhibitors will be excluded from the study. All subjects will be on a weight maintaining 150 gram carbohydrate diet three days prior to the study. If not previously documented in the subject's medical records a 3-hour glucose tolerance test will be performed on a day prior to L-Dopa administration. Subsequently, after an overnight fast all will be given a 7.5 mg/kg dose of L-Dopa by mouth at 8:00 a.m. In the supine position venous blood samples will be obtained from an indwelling scalp vein catheter at -15, 0, 15, 30, 45, 60, 90, 120 and 180 minutes for determinations of plasma glucose, growth hormone, insulin, glucagon and prolactin.

Manpower (in professional man years): 0.0/yr

Funding (in thousands)	FY 77:	0.0
	FY 78:	0.0

WORK UNIT NO.: 77/107

PROGRESS

No progress has been made toward the completion of this project. However, with the establishment of a Weight Control Clinic at Fitzsimons Army Medical Center it is anticipated that more ready access to the necessary patient populations will exist. Therefore, completion of the protocol is expected during the next fiscal year.

In addition to L-Dopa, dopamine infusions also stimulate glucagon release. It would be of interest also to study the effect of the dopaminergic agonist, bromo-criptine, on glucagon physiology. The effect of this drug also may be more clinically relevant in that it is more potent and apparently better tolerated by patients than L-Dopa. It is planned, therefore, to modify the above protocol or submit an additional protocol to allow the study of the effect of bromocriptine as well as L-Dopa on control patients as well as obese patients with or without glucose intolerance.

Publications and Presentations: None

STATUS:

Ongoing.

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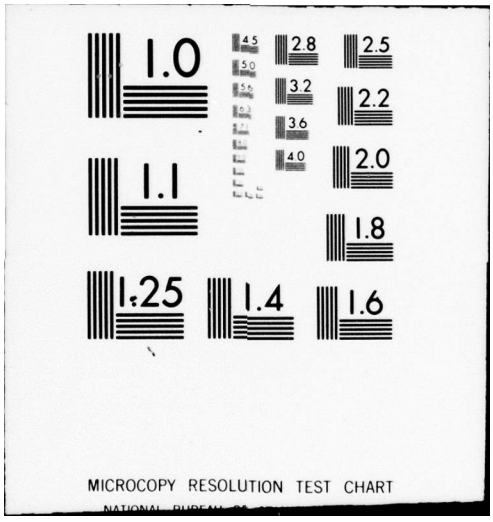
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CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A Comparison of the Clinical and Immunologic Response to Grass Pollen Extract With or Without the Addition of Glycerin.

WORK UNIT NO.: 77/108

PRINCIPAL INVESTIGATOR: William R. Tipton, LTC, MC

ASSOCIATE INVESTIGATOR: Harold S. Nelson, COL, MC

OBJECTIVES

To determine whether there is a difference in the immunologic response to allergy injection therapy if the vehicle for the pollen extract contains glycerin as opposed to saline.

TECHNICAL APPROACH

Alternate patients placed on grass immunotherapy and consenting to participate have been followed for a period of 9 to 10 months. Blood specimens were collected prior to initiation of immunotherapy prior to the grass pollen season of 1978 and following the seasonal rise in grass specific IgE in August 1978. These will be compared for specific IgE and IgG blocking antibodies.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Approximately 22 patients are in the study. The final blood specimens are now being collected.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Further Investigation of the Esophago-bronchial Reflex Mechanism, and on the Association Between Gastroesophageal Reflux and Asthma.

WORK UNIT NO.: 77/109

PRINCIPAL INVESTIGATOR: Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATORS: John R. Hofmann, CPT, VC
W. Nicholas Glab, SP6

OBJECTIVES

To demonstrate that reflexes exist between the lower esophagus and the lungs that are vagally mediated and furthermore, that they can cause bronchoconstriction.

TECHNICAL APPROACH

A group of dogs will be artifically given esophagitis by frequent hydrochloric acid infusions. These dogs then will be intubated under light anesthesia and have various procedures performed upon them including measurements of sensitive pulmonary functions while acid is being instilled into this inflamed area of the lower esophagus. They will also have at the same time, if having a positive response, atropine given systemically in an attempt to block this postulated reflex.

Manpower (in professional man years): 0

Funding (in thousands) FY 77: 0
FY 78: 5.0

PROGRESS

As of August 1978, due to the non-arrival of certain pieces of significant equipment for this protocol to be carried out, the protocol has not been initiated. It is expected, as all the equipment has arrived, to initiate this protocol at the beginning of calendar year 1979.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Effect of Chronic Oral Propranolol on Glucose Tolerance.

WORK UNIT NO.: 77/110

PRINCIPAL INVESTIGATOR: Gary L. Treece, MAJ, MC

ASSOCIATE INVESTIGATORS: John Haas, COL, MC
Frances Crittenden, CPT, ANC

OBJECTIVES

To determine what effect propranolol given orally for the treatment of hypertension and angina pectoris has on intravenous and oral glucose tolerance tests in light of recent case reports of hyperglycemia non-ketotic coma attributed to propranolol therapy (Podolsky, 1973).

TECHNICAL APPROACH

Patients with hypertension being started on propranolol therapy will be the subjects for this study. A baseline IVGTT and 5-hr OGTT will be obtained prior to therapy. The initial dose of propranolol will be 40 mg qid po. A repeat IVGTT and 5-hr OGTT will be obtained at 2 and 6 weeks of therapy. In some subjects, hydrochlorthiazide will be added to the propranolol therapy and a repeat IVGTT and 5-hr OGTT obtained after 1 month of combined therapy. The effect of propranolol on glucose disappearance rate (K value) and glucose tolerance will be examined. The effect of propranolol on insulin and glucagon levels will also be examined.

Manpower (in professional man years): 0.0/yr

Funding (in thousands) FY 78: 0.0

PROGRESS

Work on this protocol began at MAMC when the principle investigator was in fellowship. The results obtained on six subjects was reported in the MAMC CIS 1977 report. Approval was given on 7 Jun 77 to transfer the protocol to FAMC CIS with the protocol to remain ongoing at MAMC

WORK UNIT NO.: 77/110

PROGRESS - continued

with both groups to combine efforts. However, it has been decided to terminate the MAMC CIS involvement and to have the FAMC investigators complete the protocol. Although no progress has been seen recently it is anticipated that the protocol will near completion during the next year.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: An Investigation of the Effects of Antihistamines and Aspirin on the Late Skin Test Reaction.

WORK UNIT NO.: 77/111

PRINCIPAL INVESTIGATOR: Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATOR: Joseph A. Smith, MAJ, USAF, MC

OBJECTIVES

To discover if prostaglandins may play a role in the late reaction to allergy skin testing.

TECHNICAL APPROACH

Ten to twelve patients who demonstrate late cutaneous reactions to various allergens, ragweed or Timothy grass, will be utilized in this study. They will be given a combination of different histamine antagonists prior to being skin tested and likewise, will receive a therapeutic dose of Aspirin prior to being skin tested in order to evaluate the possible mode of development of the late cutaneous reaction. Skin tests will be evaluated as to their size and will be analyzed by planometry and the effects of the various drug regimens of the skin tests compared.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 78: 0

PROGRESS

At the time of this writing, August 1978, nine patients have completed the protocol; three more patients are being sought to complete the protocol at which time the data will be evaluated and conclusions reached.

Publications and Presentations: None

STATUS:
Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Study of the Diagnostic Role of Serum and Bone Marrow Lactate Dehydrogenase Isoenzymes (LDH).

WORK UNIT NO.: 77/112

PRINCIPAL INVESTIGATOR: John C. Michalak, MAJ, MC

ASSOCIATE INVESTIGATORS: Thomas Alford, CPT, MC
Kenneth D. Herbst, Associate Professor,
San Diego Veterans Administration Hospital

OBJECTIVES

To determine if serum or bone marrow LDH isoenzymes are an aid to diagnosis or a parameter to follow in a variety of hematological and oncological disease states.

TECHNICAL APPROACH

Adult patients who are having a bone marrow performed for diagnostic reasons will have 2-3cc of additional blood aspirated from the bone marrow and 10cc of peripheral blood evaluated for total LDH and LDH isoenzymes. Informed consent emphasizes the additional phlebotomy and prolongation of the bone marrow biopsy procedure. No follow-up studies are needed.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 78: 0.0

PROGRESS

Serum and bone marrow, LDH and isoenzymes patterns were evaluated in 76 patients to compare serum and bone marrow LDH. In 6 patients with acute leukemia, 20 bone marrow specimens obtained during relapse showed a higher mean of LDH, 598 iu/l, than 26 patients obtained during remission, 317 iu/l. The total LDH correlated better with blast count than with marrow cellularity. Six of 19 biopsys had a morphological evidence of lymphoma and all six specimens showed elevation of total LDH, mean 738 iu/l and had an accentuation of LDH

WORK UNIT NO.: 77/112

Progress - continued

3 and 4. Of 13 specimens negative of lymphoma, all LDH studies were normal. Presently the study is in a holding pattern, plans are to obtain normal marrow from patients undergoing cardiac surgery, to obtain more normal controls. It is felt the study should probably be restarted in patients with leukemia and malignant lymphoma.

Publications:

1. Michalak, J.C., Alford, T.J., and Herbst, K.D.: Bone Marrow Lactate Dehydrogenase (LDH) in Lymphoma and Acute Leukemia. Blood, Volume 50, Supplement 376, 1977.

Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A Study of Terbutaline Aerosol in the Treatment of Patients with Bronchial Asthma.

WORK UNIT NO.: 77/113

PRINCIPAL INVESTIGATORS: Joseph A. Smith, MAJ, USAF, MC
Harold S. Nelson, COL, MC
Richard W. Weber, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To determine the effectiveness of freon propelled metered dose aerosol terbutaline as a bronchodilator administered on a regular four times a day basis. Two specific considerations were (1) whether the bronchodilator response was sustained with chronic administration and (2) to compare the relative effectiveness of terbutaline as a sole medication to that of theophylline in optimum doses as a sole medication.

TECHNICAL APPROACH

This study consisted of two parts: In the first part, 15 patients were taken off all beta adrenergic bronchodilators for a period of two weeks. The response to aerosolized terbutaline was then measured following which they were placed on a metered dose inhalation of aerosolized terbutaline, four times a day for twelve weeks. During this period, their response to terbutaline was measured in the Allergy Clinic every two weeks. At the beginning and at the end of the twelve week period, double-blind comparisons were made in the Allergy Clinic between the bronchodilator response over a four hour period of time to placebo or to terbutaline. In the second portion of the study, patients were placed on optimal theophylline; they then received optimal theophylline and aerosolized terbutaline for a week during which time they measured their pulmonary function at home four times daily, on a Wright peak flow meter. Following one week, they were placed on a cross over double-blind in which they received one active drug and one placebo for two weeks. At the end of this time, another open week of observation ensued in which they received both active drugs, following which they went into a second double-blind period in which the active drug of the previous two week double-blind was replaced by a placebo - while they received the second drug in its active form.

WORK UNIT NO.: 77/113

Manpower (in professional man years): 0.5/yr

Funding (in thousands) FY 77: 0.0
FY 78: 0.0

PROGRESS

Part #1 is now completed with 14 patients having been studied, Part #2 is now in progress - 10 patients have completed it and an additional five are involved in the study. When they are finished, part #2 will also be completed.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Effect of Propranolol in Patients with Reactive Hypoglycemia.

WORK UNIT NO.: 77/114

PRINCIPAL INVESTIGATOR: Gary L. Treece, MAJ, MC

ASSOCIATE INVESTIGATORS: Fred D. Hofeldt, LTC, MC
M. Arthur Charles, LTC, MC
Annelie Shackleford, MT

OBJECTIVES

To investigate the therapeutic efficacy of chronic oral propranolol (Inderal) administration on the symptoms and metabolic defects of patients with postabsorptive (reactive) hypoglycemia.

TECHNICAL APPROACH

The subjects will be those with persistent symptomatology despite prior drug or dietary therapy for any of the forms of reactive hypoglycemia. A baseline 5-hr oral glucose tolerance test (GTT) using 100 grams of glucose and a 3-day 150 gram carbohydrate preparatory diet will be obtained. A dietary, drug and symptom history will also be recorded in the form of a questionnaire. Propranolol (160 mg qd po) or placebo will then be administered double blindly for one month. A repeat 5-hr GTT will be performed and a second questionnaire obtained at the end of the month. For a second month the alternate drug is administered and another 5-hr GTT and questionnaire obtained. The effect of glucose, insulin, glucagon, growth hormone, cortisol and prolaction levels during the 5-hr GTT will be compared.

Manpower (in professional man years): 0.0/yr

Funding (in thousands) FY 78: 0.0

PROGRESS

Preliminary results on four subjects administered propranolol only for one month suggest an improved symptom complex on the drug.

WORK UNIT NO.: 77/114

PROGRESS - continued

However, placebo effect cannot be ruled out. The glucose nadir during the GTT on propranolol tended to be higher without any change in basal or postprandial insulin, glucagon, cortisol or prolactin levels. Basal growth hormone levels were not effected but postprandial growth hormone levels were higher.

Completion of the study awaits the obtaining of placebo tablets from Ayerst Laboratories Co. Due to a failure of the SGO to apply to the FDA for an IND number the placebo tablets have not been released by Ayerst. The oversight has recently been corrected and as soon as the IND number is obtained the placebo tablets should become available and progress on the definitive protocol will ensue.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Adaptation of Leukocyte Chemiluminescence for Small Volumes of Blood.

WORK UNIT NO.: 78/100

PRINCIPAL INVESTIGATORS: Richard D. deShazo, MAJ, MC
George L. Brown, LTC, MSC, PhD

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To develop a method for the determinations of leukocyte chemiluminescence (CL) using small volumes of blood.

TECHNICAL APPROACH

All subjects in this study are immunologically normal volunteers from the patient population or staff of Fitzsimons Army Medical Center. The methods to be followed are those for the standard system and that involving the processing of responder leukocytes according to the protocol.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 77: 2.5
FY 78: 0.0

PROGRESS

This protocol was completed in July 1978.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of Prostaglandins Producing Suppressor Cells in Cancer Patients.

WORK UNIT NO.: 78/101

PRINCIPAL INVESTIGATORS: Richard D. deShazo, MAJ, MC
George L. Brown, LTC, MSC, PhD

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To confirm the presence of previously reported prostaglandins - producing cells capable of suppressing cell mediated immunity in patients with cancer and establish their sensitivity to a prostaglandins synthetase inhibitor.

TECHNICAL APPROACH

This study is a coordinated effort between the Allergy Service, Oncology/Hematology Service (Department of Medicine) and the Clinical Investigation Service of Fitzsimons Army Medical Center. The patient selection will include clearly documented cases of Hodgkin's Disease, lymphoma, leukemia and solid tumors. Patients selected had no other associated diseases known to result in immunologic dysfunction and they were not receiving immunotherapy, chemotherapy, or radiotherapy. A group of normal volunteers served as blood donors for lymphocyte culture controls. Testing included initial *in vivo* and *in vitro* evaluation.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 77: 2.5
FY 78: 2

PROGRESS

Technology has been developed and determinations performed on four patients. Protocol has been submitted and approved at WRAMC as well.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Development of Specific and Cross Subsensitivity in the Tracheal Tissues of Guinea Pigs Treated with Isoproterenol and Aminophylline.

WORK UNIT NO: 78/102

PRINCIPAL INVESTIGATORS: Ronald Tipton, LTC, MC
Kraig W. Jacobson, MAJ, MC

ASSOCIATE INVESTIGATORS: Joseph Souhrada, M.D., National Jewish Hospital
Helen Morris, M.D., National Jewish Hospital
Harold S. Nelson, COL, MC

OBJECTIVES

This study is designed to measure the development of the subsensitivity to two drugs, Isoproterenol and Theophylline by examining both their dilating response on histamine contracted tracheal rings and their ability to increase levels of cyclic-AMP in tracheal tissue and parenchymal lung tissue. Cyclic-AMP is considered to be "second messenger" in inducing smooth muscle relaxation and initiated by these two drugs. In each system, evidence will be sought of subsensitivity not only to the drug administered to the animal, but also to the other drug in the study and to combine stimulation to both drugs. Data will also be sought concerning the effect of H_1 and H_2 antagonists on the actions of these drugs.

TECHNICAL APPROACH

Guinea pig tracheal and peripheral lung strips will be analyzed for cyclic nucleotide levels as well as physiological response to various mediators as previously described. Modifications to existing equipment will enable the investigators to do the tension studies at Fitzsimons Army Medical Center.

Manpower (in professional man years) 2.5/yr

Funding (in thousands) FY 78: 3.6

PROGRESS

The first phase of the study has been completed and reported at the 31st Annual Army Pulmonary Disease Symposium at Fitzsimons

WORK UNIT NO.: 78/102

PROGRESS - continued

Army Medical Center, and will be submitted for presentation at the American Thoracic Society. It also will be submitted for publication.

Initial results are summarized as follows:

1. Subsensitivity was demonstrated at one hour after the last dose of isoproterenol by both tension studies and depressed cyclic-AMP tissue levels.

2. There was subsensitivity demonstrated throughout the six hour time course of the experiment following multiple doses of isoproterenol as demonstrated by the stimulated cyclic-AMP level of the tissues being depressed.

3. A difference was demonstrated in the physiological and pharmacological responses of upper and lower sections of the trachea relating to the probable number of Beta-adrenoceptors present.

A probable original finding is the difference demonstrated between the sections of the trachea and further study is indicated along this line.

Publications: None

Presentations:

(1) Tipton, W.R., Jacobson, K., Nelson, H.S., Morris, H., Souhrada, J: Dynamics and Mechanism of Guinea Pig Trachea Subsensitivity to Isoproterenol. Presented 31st Annual Pulmonary Disease Symposium, Fitzsimons Army Medical Center, Denver, Colorado, September 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Trial of Lithium Carbonate to Prevent or Reduce Neutropenia in Dogs Receiving Radiation.

WORK UNIT NO.: 78/103

PRINCIPAL INVESTIGATOR: Nicholas J. DiBella, LTC, MC

ASSOCIATE INVESTIGATORS: Donald G. Corby, COL, MC
W. Nicholas Glab, SP6, B.S.
Donald B. Mercill, DAC, B.S.

OBJECTIVES

To determine the efficacy of lithium carbonate in preventing or reducing the neutropenia due to myelotoxic irradiation.

TECHNICAL APPROACH

Dogs will be maintained at myeloproliferative lithium levels for 21 days, after which half will receive 175 rads of whole body radiation. Bone marrow biopsy, complete blood count with differential, and serum colony stimulating factor will be monitored during the course of the study and compared with control animals.

Manpower (in professional man years): 0.2/yr

Funding (in thousands) FY 77: 0
FY 78: 2.5

PROGRESS

Half of the control values for the study have been completed. Presently, the dosage regimen for lithium carbonate in dogs consistent with enhanced granulopoesis is being studied.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Study of Coagulation Parameters in Patients with Suspected Deep Vein Thrombophlebitis Before and After Venography.

WORK UNIT NO.: 78/104

PRINCIPAL INVESTIGATOR: Joseph R. Haskett, Jr., CPT, MC

ASSOCIATE INVESTIGATORS: John C. Michalak, MAJ, MC
Judy Barber, GS-09, DAC
Patricia Rush, GS-09, DAC

OBJECTIVES

To determine if coagulation parameters which have been associated with hypercoagulable states are altered by lower extremity venography.

TECHNICAL APPROACH

Following informed consent all adult patients who are referred to the Department of Radiology for venography are screened with a variety of clotting studies to include: fibrinogen and fibrin degradation products, protamine sulfate paracoagulation test, thrombin generation index, and serum anti-thrombin 3 before venography and 24 hours after to determine if there is a change in the patients coagulation parameters from the procedure and dye.

Manpower (in professional man years): 0.0

Funding (in thousands) FY 78: 0

PROGRESS

Patient accural has been slow and only one patient has been placed on the venogram study. To improve patient accural it is felt that we should amend the protocol to evaluate patients before and after a variety of radiographic dye studies. An amendment to the protocol will be made in January or February 1979.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Ifosfamide plus Fluorouracil in the Treatment of Pulmonary Carcinoma.

WORK UNIT NO.: 78/105

PRINCIPAL INVESTIGATOR: Eduardo R. Pajon, Jr., MAJ, MC

ASSOCIATE INVESTIGATOR: Nicholas J. DiBella, LTC, MC

OBJECTIVES

To obtain results of treating pulmonary carcinoma with a combination of ifosfamide and fluorouracil and to determine the maximum effective dose of the above combination.

TECHNICAL APPROACH

Since March 1978 after Surgeon General approval of the protocol, all patients with unresectable known oat cell carcinoma of the lung have been eligible for study. A total of seven patients at Fitzsimons have been entered on this study. Additional patients have been entered on the study from the other corporate institutions and will not be reported here. All patients have been treated with the combination drugs, 5-day infusion of ifosfamide and weekly doses of 5-FU repeated monthly with followup of clinical and laboratory parameters.

Manpower (in professional man years): 1.0/yr

Funding (in thousands) FY 78: 0.

PROGRESS

Since inception of the study seven patients at Fitzsimons have been entered. The following is a progress report of them.

(1) MG - had progression of disease and died of her carcinoma within two months of starting treatment.

(2) HB - has been on treatment with ifosfamide and 5-FU since August 1978 and has stable disease.

WORK UNIT NO.: 78/105

PROGRESS - continued

(3) ID - I presently showing evidence of partial remission.

(4) JC - began ifosfamide on June 1978; however, showed progression of disease in September 1978 at which time he was switched to an alternative chemotherapy protocol.

(5) RC - began ifosfamide May 1978 and is still presently receiving ifosfamide with stable disease and significant subjective improvement of metastatic bone pain.

(6) HD - has just been recently started on ifosfamide and it is too early to evaluate.

(7) EP - has just been recently started on ifosfamide and it is too early to evaluate.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Effects of the Evaluation of the Frequency of Pollen Allergen Injections During the Pollen Season.

WORK UNIT NO.: 78/106

PRINCIPAL INVESTIGATOR: Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATOR: William R. Tipton, LTC, MC

OBJECTIVES

To establish if the more frequent use of hyposensitization injections during the specific pollen season for which patients are receiving immunotherapy, is immunologically or clinically better than a less frequent schedule.

TECHNICAL APPROACH

Two groups of 10-12 patients relatively well matched in regard to severity of symptoms, serum IgE levels and nasal provocation sensitivity to the specific pollens involved will be compared. One group will receive their allergy immunotherapy on a once weekly basis. One group will receive it on a three weekly basis. These two groups will be compared on the basis of nasal provocation before and after the season. Specific serum IgE antibodies before and after the season. Specific IgG - before and after the season. Finally, they will all complete a twice daily symptoms score. All of this data will be compared in an attempt to evaluate which mode of therapy is more beneficial to the patient. The aim of the study is to determine if a once weekly schedule offers a significant therapeutic benefit in relationship to patient and government cost as opposed to the three weekly schedule.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 78: 0

PROGRESS

As of August 1978, we have been unable to find 24 patients who fullfill all the requirements for the study. Therefore, it was

WORK UNIT NO.: 78/106

PROGRESS - continued

elected to perform the study in the summer of 1979.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: An Evaluation of the Efficacy of Animal Dander Allergy Immunotherapy in Perennial Rhinitis.

WORK UNIT NO.: 78/107

PRINCIPAL INVESTIGATORS: Alvin J. Aubry, MAJ, MC
Gary P. Carpenter, MAJ, MC
Lyndon E. Mansfield, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To evaluate in a double-blind fashion, the efficacy of animal dander allergy immunotherapy.

TECHNICAL APPROACH

Thirty patients who fill the requirements of animal dander allergy will be selected from our population. These patients will undergo testing including nasal provocation to determine the sensitivity of serum IgE levels and titrated skin tests will be performed in order to ascertain the degree of cutaneous sensitivity. Fifteen of these patients in a blinded random fashion will have allergy immunotherapy to maintenance performed with commercial animal dander extracts. A comparison will be made between the group treated and the nontreated group of patients in relationship to their levels of sensitivity, serum specific IgE levels and skin test sensitivity and nasal sensitivity after maintenance immunotherapy is reached.

Manpower (in professional man years): 0

Funding (in thousands) FY 78: 0

PROGRESS

Patients at present are being selected for this study according to the required protocol. The equipment for the nasal provocation is

WORK UNIT NO.: 78/107

PROGRESS - continued

on hand and it is expected that this study will begin in September 1978.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: An Investigation into the Generation of Antigen Specific Suppressor Cells During Allergy Immunotherapy.

WORK UNIT NO.: 78/108

PRINCIPAL INVESTIGATORS: Lyndon E. Mansfield, LTC, MC
George L. Brown, LTC, MSC, PhD
Harold S. Nelson, COL, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

The object of this study is to evaluate the development of antigen specific regulatory cells during allergy immunotherapy, and to ascertain whether these cells suppress formation of IgE. In this investigation a new technique known as co-culture will be used.

TECHNICAL APPROACH

Ten patients beginning allergy immunotherapy will be evaluated. They will have blood drawn for lymphocyte studies including antigen stimulated blastogenesis. The total amount of IgE generated from these cultures with different concentrations of antigen; total amount of specific IgE generated from these cultures, upon stimulation by different concentrations of antigen, will be evaluated. These cells will also be co-cultured with normal person's lymphocytes and the same procedure performed. After a period of time when these patients are able to reach allergy maintenance immunotherapy, the procedure will be repeated. One alteration will be that these patient's cells will be co-cultured with a new non-treated allergic patient's cells, which will also undergo antigen stimulation. The object of this technique will be to show that during the course of immunotherapy, the changes in specific IgE generated under stimulation by antigen is decreased by the development of a T suppressor cell mechanism.

Manpower (in professional man years): 0.2/yr

Funding (in thousands) FY 78: 5.0

WORK UNIT NO.: 78/108

PROGRESS

Initial work in antigen and co-culturing has begun. Attempts are now being made to increase the sensitivity of the assay for specific IgE antibody. It is felt that the first patient will begin the study in September or October 1978.

Publications and Presentations: None

STATUS:

Ongoing.

SURGERY

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of Peripheral Nerve Injuries at Fitzsimons General Hospital.

WORK UNIT NO.: 71/202

PRINCIPAL INVESTIGATOR: Anthony Ballard, COL, MC

ASSOCIATE INVESTIGATOR: William W. Eversmann, Jr., LTC, MC

OBJECTIVES

The purpose of this study is to evaluate the functional recovery, sensory and motor of these upper extremity and lower extremity peripheral nerve injuries. In the past year these have been carried out by visits at Fitzsimons AMC of multiple patients who have returned at our request through our monitoring and evaluation by mail. As a consequence, long postoperative followups are being made available in order to document the long term outcome of these injuries.

TECHNICAL APPROACH

Detailed clinical examination by either the principal or associate investigator supplemented by sensibility studies in Occupational Therapy and occasionally an examination by electrical techniques continue to be the mainstay of followup of these patients. The maintenance of consistent and accurate records of these prolonged followups continues to be essential.

Manpower (in professional man years): 0.1/yr

Funding (in thousands)		
	FY 77:	0
	FY 78:	0

PROGRESS

Although the feasibility of detailed and longterm and complete followup of these nerve injuries both from a fiscal sense and from a logistical

WORK UNIT NO.: 71/202

PROGRESS - continued

sense seems to be difficult and possibly outside the feasibility of this study patients continue to return to Fitzsimons AMC for detailed followup and examination. The improvements of neurological function which continually are seen outside the two year limit which in the past has been considered the upper limits of improvement in both motor and sensory function following neurological injury continue to accumulate. The improvement we are seeing particularly in high brachial plexus and peripheral nerve injuries and resultant increasing function in the hand is indeed remarkable and following collection of further data will merit scientific presentation. For the moment, however, limitations on funds, logistical support and physician time require us to continue to follow these patients here at Fitzsimons AMC in order to collect data concerning the longterm followup of these nerve injuries. This protocol is continuing in nature.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Treatment of Urinary Tract Trauma in the Laboratory Animal.

WORK UNIT NO.: 73/219

PRINCIPAL INVESTIGATOR: John A. Vaccaro, CPT, MC

ASSOCIATE INVESTIGATORS: Robert M. Dobbs, COL, MC
Howard E. Fauver, COL, MC
Glenn W. Dunnington, COL, MC

OBJECTIVES

Investigation of and comparison of various modes of treatment of urological trauma with emphasis on newer surgical techniques to include renal vascular repair, Bench surgery and autotransplantation.

TECHNICAL APPROACH

Various techniques of vascular reanastomosis and autotransplantation will be performed. This will be followed by IVPs 2-4 weeks post-operatively to ascertain success or failure.

Manpower (in professional man years): 1.5/yr

Funding (in thousands)	FY 77:	3.0
	FY 78:	3.0

PROGRESS

This protocol was again used last winter for autotransplantation techniques and vascular surgery techniques. At that time the right kidney was transplanted to the right iliac vessels with success in 2/6 dogs showing this feasible.

WORK UNIT NO.: 73/219

Publications:

1. Levisay, G.L.: Renal Autotransplantation in the Dog. Proc. of the Kimbrough Urological Seminar, January 1974.

2. Jackson, J.E.: Renal Autotransplantation with Partial Nephrectomy in the Dog. Proc. of the South Central Section, AUA, Denver, Colorado 15-19 September 1974. (Published)

3. Page, M.E.: Renal Autotransplantation with Venal Caval Occlusion. To be published in Proc. of the Kimbrough Urological Seminar, Seattle, Washington, 5 October 1975.

Presentations:

1. Levisay, G.L.: Renal Autotransplantation in the Dog. Presented: Kimbrough Urological Seminar, Washington, D.C., January 1974.

2. Levisay, G.L.: Renal Autotransplantation in the Dog. Presented: South Central Section Meeting of the AUA, Denver, Colorado, September 1974.

3. Jackson, J.E.: Renal Autotransplantation with Partial Nephrectomy in the Dog. Presented: South Central Section of the AUA, Denver, Colorado, 15-19 September 1974.

4. Jackson, J.E.: Renal Autotransplantation with Partial Nephrectomy in the Dog. Presented: Kimbrough Urological Seminar, San Antonio, Texas, 14-19 November 1974.

5. Page, M.E.: Renal Autotransplantation with Venal Caval Occlusion. To be presented at the Kimbrough Urological Seminar, Seattle, Washington, October 5, 1975.

6. Page, M.E., and Weigel, J.W.: Exhibit-Renal Transplantation with Proximal Vena Caval. Presented: South Central Section Meeting in Urology, September 1975.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Treatment of Digoxin Toxicity with Activated Charcoal.

WORK UNIT NO.: 74/202

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: John R. Hofmann, CPT, VC
Thomas P. O'Barr, PhD., DAC
W. Nicholas Glab, BS, SP/6

OBJECTIVES

Evaluate activated charcoal in the treatment of digoxin and digitoxin toxicity.

TECHNICAL APPROACH

Dogs were made digoxin or digitoxin intoxicated and subsequently treated with oral activated charcoal. Digoxin or digitoxin levels in serum, urine and bile were determined in treated and control groups.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0.5
FY 78: 0.5

PROGRESS

During the past fiscal year work on this project has concentrated on the development of adequate dosage schedule for assuring mild digitalis overdosage, agrahpic studies to determine adequacy of gastric motility in anesthetized dogs. Although initial work has clearly demonstrated the feasibility of the administration of activated charcoal in the treatment of acute digitalis toxicity, technical problems associated with the dog model utilized in assessing mild digitoxic states have proved to be insurmountable. Additionally, research requirements have restricted manpower organization for this study to the minimum. It is because of this reason, it is recommended that this protocol be terminated at this time.

WORK UNIT NO.: 74/202

Publications:

1. Zajtchuk, R.: Treatment of Digoxin Toxicity with Activated Charcoal. Am. J. Cardiol., Vol 35, February 1975.

Presentations:

1. Zajtchuk, R.: Treatment of Digoxin Toxicity with Activated Charcoal. Presented: American College of Cardiology, Houston, Texas, February 1975.

STATUS:

Terminated.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 82040

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Role of Hypercoagulability in Patients Undergoing Myocardial Revascularization.

WORK UNIT NO.: 75/200

PRINCIPAL INVESTIGATOR: Russ Zajtchuk, LTC, MC

ASSOCIATE INVESTIGATOR: George F. Schuchmann, LTC, MC

OBJECTIVES

To identify hypercoagulable patients undergoing saphenous vein aortocoronary bypass operations. To institute rational treatment of such patients.

TECHNICAL APPROACH

Patients undergoing coronary artery bypass surgery will be evaluated pre-operatively and on 3rd, 6th, 8th, 10th, 14th, and 21st post-operative days. Parameters which will be evaluated to include platelet count, platelet adhesivity, activated partial thromboplastin time, factor VIII assay, serum cholesterol, triglycerides, anti-thrombin III levels and lipoprotein electrophoresis. Those patients found to be hypercoagulable will be treated appropriately.

Manpower (in professional man years): 0.5/yr

Funding (in thousands) FY 77: 3.0
FY 78: 3.0

PROGRESS

One hundred patients undergoing coronary artery bypass graft surgery have undergone hypercoagulability screening as outlined above. Those patients found to be hypercoagulable were treated with appropriate anticoagulants. The results indicate an increased graft potency and a lower incidence of pulmonary embolism.

WORK UNIT NO.: 75/200

Publications:

1. Zajtchuk, R., Collins, G.J., Schuchmann, G.F., Holley, P.W., Hamaker, W.R.: Coagulation Abnormalities in Patients Undergoing Mycardial Revascularization. J. Thorac. Cardiovasc. Surg. 75:168-170, 1978.

Presentations:

1. Zajtchuk, R.: Coagulation Abnormalities in Patients Undergoing Myocardial Revascularization. The Samson Thoracic Surgical Society - 5 June 1977.

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: An Experimental Dog Model for the Study of Coronary Artery Spasm.

WORK UNIT NO.: 76/202

PRINCIPAL INVESTIGATOR: George F. Schuchmann, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To establish an animal model for the study of coronary artery spasm and to study the effects of various drugs on coronary artery blood flow.

TECHNICAL APPROACH

Surgical details of the IMA-RCA grafts have been well worked out. Flow probe measurements as outlined in the protocol continue to be inaccurate and have delayed data collection.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 1.0
FY 78 0

PROGRESS

Five dogs were long-term survivors of IMA-RCA grafts. All dogs had patent grafts proven by angiography. Later, all dogs were sacrificed and all grafts found patent at the time of surgery. Unfortunately, flow probe difficulties made collection of meaningful flow data impossible. This experiment is currently inactive while a means of obtaining accurate flow measurements is obtained.

Publications and Presentations: None

STATUS:

Terminated.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Screening Program for Military Children at High Risk for Hearing Loss.

WORK UNIT NO.: 76/203

PRINCIPAL INVESTIGATOR: Susan T. Slibeck, M.S., DAC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To screen infants and children for information indicating high risk for hearing loss so that early identification and treatment can be enhanced.

TECHNICAL APPROACH

Red Cross volunteers will screen the medical and family histories of all newborns, pediatric ward patients (0-6 years of age), and one-year old Well Baby Clinic patients through parent interviews and chart reviews. The investigator will review the gathered data for indications of high risk for hearing loss and designate children as AT RISK or NOT AT RISK. AT RISK children will be tested by an audiologist periodically for one year or until hearing loss is ruled out.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

This report covers the twenty and one-half month active period of the High Risk Registry screening program (17 October 1976 to 31 June 1978). During that time 821 children were screened by three Red Cross volunteers; 297 of these children were considered AT RISK for hearing loss; and 78 children are currently being followed on the Registry as indicated.

WORK UNIT NO.: 76/203

PROGRESS - continued

Sixteen children with depressed auditory acuity were identified. Audiometric testing and otologic consultation indicated significant hearing loss due to middle ear fluid, middle ear infection, or excessive cerumen. At the time of the screening, these hearing/medical problems had not been previously identified. One of the sixteen children also had a significant sensorineural loss requiring amplification with a hearing aid and special rehabilitation intervention. The ages of the four children ranged from 6 months to 2 years; thus achieving the objective of early identification and treatment.

The value of High Risk Registers is well documented: "Infants at risk for hearing impairment should be identified by means of history and physical examination" (National Joint Committee on Newborn Hearing Screening, 1973). The committee found that a High Risk Registry can increase identification of hearing impairment as much as ten fold. Reports of similar registers indicate that 1 out of 57 AT RISK children will be hearing impaired. The registry procedures used in this program have yielded a more economical result: 1 out of 186 AT RISK children were hearing impaired.

At last year's progress report review, the project's hearing loss identification rate was 1 out of 42. Data collected during that first year led to applying more stringent high risk criteria, thus reducing the number of children labeled AT RISK. This modification resulted in increasing the efficiency of the program.

Publications: None

Presentations

(1) Silbeck, Susan T.: High Risk Factors for Hearing Loss. Presented: Pediatric Department, Fort Carson, Colorado December 1976.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Use of Cyclic AMP in the Evaluation of Calcium Urolithiasis.

WORK UNIT NO.: 76/205

PRINCIPAL INVESTIGATOR: John A. Vaccaro, CPT, MC

ASSOCIATE INVESTIGATORS: Howard E. Fauver, COL, MC
Daniel W. Horne, MAJ, MC
Glenn W. Dunnington, LTC, MC

OBJECTIVES

To measure nephrogenous CAMP levels to differentiate renal causes of hypercalciuria from other causes.

TECHNICAL APPROACH

The use of various blood studies and urine collections to define the metabolic basis of stone disease in recurrent stone formers. The hallmark of these studies will be serum and urine cyclic AMP. Using these values, appropriate treatment will be prescribed to patients.

Manpower (in professional may years): .25/yr

Funding (in thousands) FY 77: .3
FY 78: .3

PROGRESS

Patients are routinely followed in the stone protocol clinic and currently the department of endocrinology will assist in this evaluation. Stone workups are being standardized and treatment better understood.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE Investigation of Ureter (Partial and Complete) and Bladder (Sub-total) Replacement with Synthetic Materials.

WORK UNIT NO.: 77/200

PRINCIPAL INVESTIGATOR: Torrence M. Wilson, MAJ, MC

ASSOCIATE INVESTIGATORS: Robert M. Dobbs, COL, MC
Norman E. Peterson, M.D., Chief, Urology Service
University of Colorado Medical School

OBJECTIVES

Evaluate the feasibility of replacing ureteral segments and bladder segments with synthetic prosthetic devices. The initial effort will be with Gor-Tex.

TECHNICAL APPROACH

Mongrel dogs under anesthesia will have a portion of their ureter or bladder replaced with Gore-Tex. Followup evaluation will include contrast studies and tissue segments for pathologic study.

Manpower (in professional man years): 0

Funding (in thousands): FY 77: 4.0
FY 78: 4.0

PROGRESS

The purpose of this study was to examine the feasibility of using expanded polytetrafluroethylene as a ureteral prosthesis. Over all results were encouraging in that normal function occurred in 59% of cases; however, it is noted that the remainder had migration of prosthesis, obstruction, or hydronephrosis. These results are consistent with previous studies. Fibrovascular proliferation occurred along the graft, and these neotubes were patent when migration of the

WORK UNIT NO.: 77/200

PROGRESS - continued

grafts occurred. Of significance was the finding of partial or total obstruction at the proximal anastomosis in most of the hydronephrotic cases despite a generous spatulation of one centimeter on the ureter and the graft. Again, this problem has been encountered by other investigators. Future studies should concentrate on altered techniques at this site, such as right angle flaps, a wider anastomosis to the renal pelvis, or perhaps nephrostomy drainage with a longer period of stent placement.

In conclusion, the most intriguing confirmatory finding of neotube formation along these grafts suggests that further studies are warranted in order to find a practical manner to clinically utilize these proliverative properties for ureteral replacements. Problems were encountered but we feel the results are encouraging.

Publications: None

Presentations: Paper will be presented at Kimbrough Urological Seminar November 13, 1978, and published in those proceedings.

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Hydrodynamic Studies With a New Cardiac Bivalve Prosthesis and Comparison with Currently Used Prosthesis in a Pulse Duplicator.

WORK UNIT NO.: 77/201

PRINCIPAL INVESTIGATOR: Alan E. Seyfer, MAJ, MC

ASSOCIATE INVESTIGATOR: David R. Hazlett, COL, MC

OBJECTIVES

To compare cardiac valvular prosthesis with a new, low-profile, low-gradient, bivalve prosthesis.

TECHNICAL APPROACH

Inspite of tremendous advances in heart valve prosthesis, there continues to be a need for a low-profile, low-gradient, central-flow heart valve substitute. It is the purpose of this investigation to study a new cardiac valve with these specifications and to test the prototype of such a valve in a pulse duplicator. The tests will be conducted according to a strict physiologic protocol which was described in the recently submitted project outline.

Manpower (in professional man years): 0.10/yr

Funding (in thousands)	FY 77:	5.0
	FY 78:	0.2

PROGRESS

During FY 78, a final design prototype was completed, and the product was tested with a pulse duplicator. In addition, the new cardiac bivalve prothesis was tested in an experimental animal. Dr. Seyfer has been transferred to Walter Reed Medical Center where he is currently assigned as a resident in Plastic Surgery.

Publications:

1. Seyfer, A.E., Hazlett, D.R.: A New Cardiac Bivalve Prosthesis. Paper submitted in competition for the Hugh Mahon Essay Contest, June 1978.

WORK UNIT NO.: 77/201

Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Use of Nephrogenous Cyclic AMP in the Evaluation of Calcium Urolithiasis.

WORK UNIT NO.: 77/202

PRINCIPAL INVESTIGATOR: John A. Vaccaro, CPT, MC

ASSOCIATE INVESTIGATORS: Howard E. Fauver, COL, MC
Daniel W. Horne, MAJ, MC
Glenn W. Dunnington, LTC, MC

OBJECTIVES

The main objective of this protocol is to measure nephrogenous CAMP levels and, thus, differentiate renal causes of hypercalciurias from other causes. This can be calculated in the following manner.

$$C_{AMP} \text{ filtered} = C_{AMP} \text{ plasma} \times C_{CV} \times \text{time of collection}$$

$$\text{CAMP nephrogenous} = \text{CAMP}_{\text{Urine}} - \text{CAMP filtered}$$

TECHNICAL APPROACH

Serum samples for determining CAMP activity will be drawn with other appropriate lab tests on each visit per outline protocol 76/205.

Manpower (in professional man years): .25/yr

Funding (in thousands) FY 78: .3

PROGRESS

Because of the lack of manpower in the Department of Urology very little has been done with two new residents coming in January 1979 this project will be resumed.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Use of Urinary Prostaglandins in the Evaluation of Recurrent Calculus Disease - Addendum to 76/205.

WORK UNIT NO.: 77/203

PRINCIPAL INVESTIGATOR: John A. Vaccaro, CPT, MC

ASSOCIATE INVESTIGATORS: Howard E. Fauver, COL, MC
Daniel W. Horne, MAJ, MC
Glenn W. Dunnington, LTC, MC

OBJECTIVES

Measure urinary prostaglandins as a possible cause of hypercalciuria in recurrent stone formers.

TECHNICAL APPROACH

1. Working with protocol 76/205 the urine would be screened using a high performance liquid chromatographic separation of urinary prostaglandins F_2, F_2a, E_1, E_2, and A via a phase column.

2. If a pattern of prostaglandin excretion could be determined, then a radioimmune assay could be developed for increased sensitivity of excretion.

Manpower (in professional man years): 0

Funding (in thousands) FY 78: 0

PROGRESS

Because of the lack of manpower in the Urology Department there has been a minimal amount of work done on this protocol, however, in January 1979 with the arrival of two new residents, this protocol will be resumed.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Anatomical and Physiological Development of the Flexor Tendon Sheaths in the Human Fetus.

WORK UNIT NO.: 77/204

PRINCIPAL INVESTIGATOR: William W. Eversmann, Jr., COL, MC

ASSOCIATE INVESTIGATOR: Michael McCabe, CPT, MC

OBJECTIVES

The purpose of this study is to identify the anatomical development of the flexor tendon sheath as it evolves in the human fetus to its fully developed form. This anatomical development will be correlated with physiological development of the flexor digitorum profundus muscle.

TECHNICAL APPROACH

Collection of human fetal specimens up to twenty weeks of age, gestational age, following voluntary interruption of pregnancy and study of the development of digits and the flexor tendon sheath by histological techniques and correlating this development with biochemical techniques of the flexor muscle mass contractability in order to establish a correlation between the development of the flexor muscles and the development of the flexor tendon sheath continues to be the mainstay of this project.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 78: 0

PROGRESS

The collection of human specimens from voluntary interruption of pregnancies was begun in the late spring 1978 and specimens have been accumulated until approximately 1 Sep 78. Approximately twenty specimens have so far been accumulated. Because of changes in the policy concerning voluntary interruption of pregnancy at that time further specimens

WORK UNIT NO.: 77/204

PROGRESS - continued

have not been available. Continuing work will be undertaken on the specimens accumulated but these specimens may in fact be insufficient to draw conclusion at this time. A change in policy concerning the voluntary interruption of pregnancy by The Office of the Surgeon General may be necessary in order to continue this study. Further followup will be given when appropriate information is available and appropriate.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Anastomosis of the Dog Vas Deferens Using Microsurgical Technique.

WORK UNIT NO.: 78/200

PRINCIPAL INVESTIGATOR: Glenn W. Dunnington, LTC, MC

ASSOCIATE INVESTIGATORS: Robert M. Dobbs, COL, MC
Howard E. Fauver, COL, MC
Torrence M. Wilson, MAJ, MC
John A. Vaccaro, CPT, MC

OBJECTIVES

To master the microsurgical anastomosis of the vas deferens.

TECHNICAL APPROACH

Standard bilateral vasectomy performed on mongrel male dogs. Three weeks later a two layer microsurgical anastomosis using 10-0 nylon is completed. Three weeks later the dog is sacrificed and bilateral vasograms completed.

Manpower (in professional man years): 0.2/yr

Funding (in thousands) FY 78: 1.3

PROGRESS

Eleven dogs have been completed and Dr. Dunnington and Dr. Wilson have mastered the use of the microscope. Dr. Vaccaro is in the process of learning the microsurgical technique.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Clinical Study for Intraocular Lenses.

WORK UNIT NO.: 78/201

PRINCIPAL INVESTIGATORS: Andrew J. Cottingham, Jr., LTC, MC
William W. Mears, COL, MC

ASSOCIATE INVESTIGATORS: Richard A. Manson, COL, MC
Garry A. Land, MAJ, MC
Floyd M. Cornell, CPT, MC
Kevin J. Chismire, CPT, MC

OBJECTIVES

1). To determine postoperative visual acuity of patients receiving an intraocular lens, and to compare those results with those of a control group of patients who undergo cataract surgery but do not receive an intraocular lens.

2). To describe the occurrence and time course of postoperative ocular complications and adverse reactions both for intraocular lens implant subjects and for control subjects.

3). To compare the occurrence of adverse reactions and ocular complications in the implant group and in the control group, in order to delineate any significant differences.

4). To describe the occurrence of postoperative lens complications for the implant group, and their relationship to ocular complications.

5). To identify subgroups within the implant study population that are at "high risk" of particular complications as compared to the control group.

TECHNICAL APPROACH

After didactic courses, observations, laboratory practice and assistance with an experienced implant surgeon, a surgeon who can perform an accomplished cataract extraction, is then allowed to perform intraocular lens surgery under proper tutorage. Postoperative examinations include:

WORK UNIT NO.: 78/201

TECHNICAL APPROACH - continued

pachyometry, keratometry, and specular microscopy. Contraindications to surgery include: patients with good visual potential in only one eye, proliferative diabetic retinopathy, rubeosis irides, high axial myopia, and inadequately controlled glaucoma, Fuch's endothelial dystrophy, and a history of previous retinal detachments or uveitis.

Manpower (in professional man years): 0.2/yr

Funding (in thousands) FY 78: 0.0

PROGRESS

Between September 1976 and February 1978, we implanted 25 intraocular lenses. Patients included 15 males and 10 females ranging in age from 53 to 83 years (mean age 68.6 years). Since March 1978, we have implanted an additional 33 intraocular lenses. Patients include 11 females and 22 males ranging from 23 to 89 years (mean age 65.7 years).

As a result of the past two years experience, we have evolved better guidelines for patient selection, better surgical techniques and improved guidance for postoperative care.

Our study includes tabulations of operative complications, postoperative complications, visual results, endothelial cell loss, corneal thickness changes, changes in corneal astigmatism, and residual refractive error.

Publications: None

Presentations:

1. Cottingham, A.J.: An Analysis of the Initial Twenty-Five Intraocular Lens Implantations in an Ophthalmology Residency Training Program. 7th Biennial, Walter Reed Ophthalmology Post Graduate Course and Alumni Meeting, April 1978.

2. Cottingham, A.J.: An Analysis of the Initial Twenty-Five Intraocular Lens Implantations in an Ophthalmology Training Program. Bascom Palmer Eye Institute Annual Resident Alumni Meeting, June 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Comparison of Metabolic and Functional Changes in Defects of Platelet Function.

WORK UNIT NO.: 72/302

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: T.P. O'Barr, Ph.D., DAC
Judy A. Barber, B.S., DAC
Ellen, Swanson, DAC

OBJECTIVES

To correlate biochemical and functional parameters to gain a better understanding of the pathophysiology of functional or qualitative platelet disorders.

TECHNICAL APPROACH

Platelet function studies (aggregation, adhesion, and adenine nucleotide AN) content and the release of these compounds following aggregation with collagen and epinephrine will be measured in patients with various congenital and acquired disorders of platelet function. These results will be correlated with appropriate metabolic studies: adenyl cyclase, c-AMP, prostaglandin endoperoxides (thrombozanes A_2 and B_2), membrane glycoproteins, etc. In addition membrane receptors for epinephrine will be quantitatively evaluated using a new technique of binding with radioactive dihydroergocryptine. Other metabolic studies will be added as indicated.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 77: 4.5
FY 78: 3.0

PROGRESS

During the past fiscal year, work on this project has concentrated in further investigation of the qualitative abnormality of platelets of newborn infants. In earlier studies (Corby & Schulman, J. Ped. 79:307, 1971) we showed that the platelets of newborn infants fail

WORK UNIT 72/302

PROGRESS - continued

to aggregate normally in response to a variety of inducers of platelet function which promote the release of adenosine diphosphate from the platelet. Data derived from FAMC Clinical Investigation Protocol 71/301 (completed in FY 75) suggested that this impairment of ADP release was due to a decreased sensitivity of newborn platelets to external stimuli (collagen and epinephrine). Since the importance of prostaglandin endoperoxides, prostaglandin G2, (PGG_2) in mediating the release of ADP from the platelets has recently been established, it appeared necessary to determine if the metabolic pathway leading to the formation of these prostaglandin endoperoxides was functional in newborn platelets. The results of these studies, reported at the 6th International Congress on Thrombosis and Hemostasis in Philadelphia, Pennsylvania, June of 1977, are described in the following abstracts: Cyclooxygenase activity was evaluated in washed platelets from paired mother and cord blood samples by monitoring the incorporation of radioactivity into metabolites during incubation with (1-^{14}C) arachidonic acid. Thin layer radiochromatograms of methylated incubation products were essentially identical. Three main peaks of radioactivity, which corresponded to identified arachidonic acid metabolites, were noted (Malmsten et al. Proc. Natl. Acad. Sci., USA, 72:1446-1450, 1975). Platelets from mothers and newborns incorporated similar amounts of radioactivity into 8-(1-hydroxy-3-oxopropyl)-9, 12L-dihydroxy-5-10-heptadecadienoic acid (PHD) and 12L-hydroxy-5,8, 10-heptadecatrienoic acid (HHT). Some variation in the extent of aggregation to arachidonic acid was observed in individual PRP samples from both mothers and infants. All infants studied exhibited aggregation in response to 50 ug of arachidonic acid. Aspirinated adult platelets, in which the conversion of arachidonic acid to prostaglandin endoperoxides is blocked, were mixed with an equal volume of newborn platelets which had been shown to be refractory to collagen and epinephrine. Although no correction was noted when epinephrine was used as the inducing agent, marked aggregation was observed following the addition of 0.1 mg/ml of soluble collagen.

The normal aggregation of newborn platelets, demonstration of the formation of prostaglandin endoperoxide metabolites, PHD and HHT, indicate that the cyclo-oxygenase pathway is intact in newborn platelets. The demonstration of correction of second phase aggregation found after administration of soluble collagen in the mixtures of aspirinated adult and normal newborn platelets further suggest that the sufficient quantities of endogenous arachidonic acid can be made available by the action of phospholipase on membrane phospholipase on membrane phospholipids. The variability of this response as noted by the failure to form adequate amounts of prostaglandin G2

WORK UNIT 72/302

PROGRESS - continued

after stimulation by epinephrine further suggests that the newborn platelet abnormality might reside in decreased sensitivity of its "Membrane Receptor Sites" to inducers of platelet functio[illegible]. We compared specific binding of the -adrenergic antagonist ^{3}H-dihydroergocryptine (DHE), in intact washed platelets prepared from paired samples of maternal and cord platelet rich plasma. Platelets of newborn infants (NBP) demonstrated normal kinetics of ^{3}H-DHE binding and normal affinity for ^{3}H-DHE. Scatchard analysis of ^{3}H-DHE binding indicated the same class of binding sites that exhibited a high affinity for the radioligand (kd = 7.5 nM). Maternal platelets were found to bind approximately 2-fold more DHE than NBP (3.70 $\pm$ .28 vs. 1.74 $\pm$ 0.17 fmol/10^{7} platelets) at saturation. This corresponds to 223 $\pm$ 17 vs. 105 $\pm$ 11 binding sites per platelet (p 001). Repeat washing of NBP did not yield increased DHE binding suggesting the binding sites had not previously been masked by elevated circulating levels of E and/nor-E in venous cord blood. When control platelets were incubated with concentrations of ^{3}H-DHE that half saturated the -adrenergic receptors, diminution of platelet function comparable to that seen in NBP was observed. Since NBP and MP are similar size, it appears that a deficiency of -adrenergic receptors may account for the diminished response of NBP to epinephrine. Abstracts reporting this research have been submitted to the Society for Pediatric Research and the International Congress of Hemostasis and Thrombosis.

Publications:

(1) Corby, D.G., Shigeta, F.H., Greene, H.L., and Stifel, F.B.: Platelet Dysfunction in Glycogen Storage Disease Type I (GSDI): Reversal with Total Parenteral Alimentation (TPA). (Abst.) Clin. Res. 21:304, 1973.

(2) Corby, D.G., Preston, K.A., Shigeta, F.H., O'Barr, T.P., and Zuck, T.F.: Adverse Effect of Gel Filtration on the Adenine Nucleotides of Human Platelets. (Abst., P. 107), III Congress, International Society on Thrombosis Hemostasis (Vienna, Austria), June 1973.

(3) Corby, D.G., (Intr. by Wm. E. Hathaway): Mechanism of Platelet Dysfunction in Newborn Infants. J. Ped. Res., Vol. 8, No. 4, April 1974.

WORK UNIT 72/302

Publications - continued

(4) Corby, D.G., Preston, K.A., O'Barr, T.P.: Adverse Effect of Gel Filtration on the Function of Human Platelets. Proceedings of the Society for Experimental Biology and Medicine, 146:96-98, 1974.

(5) Corby, D.G., Putnam, C.W., Greene, H.L.: Impaired Platelet Function in Glucose-6-Phosphatase Deficiency. The J. Ped., 85:71-76, July 1974.

(6) Corby, D.G., and Zuck, T.F.: Newborn Platelet Dysfunction: A Storage Pool and Release Defect. Thrombosis and Haemostasis, 36:200-207, 1976.

(7) Corby, D.G., Goad, W.C., Barber, J., and O'Barr, T.P.: Evaluation of Cyclo-Oxygenase Pathway in Platelets of the Newborn, Thrombosis and Haemostasis (Stuttgart), 38:35, 1977 (Abstract).

(8) Corby, D.G., and O'Barr, T.P.: Decrease in -Adrenergic Binding Sites in Newborn Platelets: Cause of Abnormal Response to Epinephrine? Blood, 52:161, 1978.

Presentations:

(1) Corby, D.G., Shigeta, F.H., Greene, H.L., and Stifel, F.B.: Platelet Dysfunction in Glycogen Storage Disease Type I (GSDI): Reversal with Total Parenteral Alimentation (TPA). Presented: Western Society for Pediatric Research, Carmel, California, February 1973.

(2) Corby, D.G., Preston, K.A., Shigeta, F.H., O'Barr, T.P., and Zuck, T.F.: Adverse Effect of Gel Filtration on the Adenine Nucleotides of Human Platelets. Presented: III Congress, International Society on Thrombosis and Hemostasis, Vienna, Austria, June 1973.

(3) Corby, D.G.: Mechanism of Platelet Dysfunction in Newborn Infants, Society for Pediatric Research, APS-SPR, Washington, D.C., May 1974.

(4) Corby, D.G., Goad, W.C., Barber, J., and O'Barr, T.P.: Evaluation of Cyclo-Oxygenase Pathway in Platelets of the Newborn. Presented: VIth International Congress on Thrombosis and Haemostasis, Philadelphia, Pennsylvania, June 1977.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Computer Storage and Analyses of Mycobacteriologic Laboratory Data from Tuberculous Patients.

WORK UNIT NO.: 73/305

PRINCIPAL INVESTIGATORS: George L. Brown, LTC, MSC, Ph.D.
James J. Damato, MAJ, MSC

ASSOCIATE INVESTIGATORS: Mary V. Rothlauf, M.S., DAC
Al Bell, DAC

OBJECTIVES

To establish and maintain an in-depth data base of mycobacteriological data on FAMC tuberculosis service patients.

TECHNICAL APPROACH

Since 1968 all mycobacteriologic results on FAMC tuberculosis patients have been stored in a computer file. Presently 2651 patient records encompassing 58,579 messages have been accumulated in the computer file. Patient data include: smear and culture results, drug susceptibilities of mycobacterial isolates, initial drug therapy data, serum tests, data on special study patients, and experimental data on methodology studies.

Manpower (in professional man years): 1.0/yr

Funding (in thousands)	FY 77:	1.5
	FY 78:	1.5

PROGRESS

Between September 1976 and September 1977, 127 patients were studied; a total of 3807 additional messages were incorporated in the existing computer file. The Formated File Print encompassing nine (9) options is presently operational:

WORK UNIT 73/305

PROGRESS - continued

1. Entire file print; 2. Supplementary patient identification; 3. Culture report; 4. Serum inhibition/drug level report; 5. Patient therapy report; 6. Organism identification; 7. Period (time span) report; 8. Individual patient print; 9. Sex-race retrieval.

Currently computer file analysis is being utilized to evaluate smear results and culture date in order to evaluate the factors for correlation or non-correlation of these procedures. To date sufficient data has not been acquired to establish reliable conclusions.

Publications: None

Presentations:

1. Brown, G.L., and M.V. Rothlauf: Computer File Analyses and Utilization of Mycobacteriology Laboratory Data. Presented: Colorado State University, May, 1978.

2. Brown, G.L., and M.V. Rothlauf: Laboratory Management of the Tuberculous Patient. Computer File Analyses of Six Year Data. Society of Armed Forces Laboratory Officers, San Antonio, Texas, September 1976.

3. Brown, G.L., and M.V. Rothlauf: Computer Utilization in the Laboratory. Colorado State University, Ft. Collins, Colorado, April, 1977.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Microbiological Research in Tuberculosis.

WORK UNIT NO.: 74/300

PRINCIPAL INVESTIGATORS: George L. Brown, LTC, MSC, Ph.D.
James J. Damato, MAJ, MSC

ASSOCIATE INVESTIGATORS: Mary V. Rothlauf, M.S., DAC
James D. Hakes, DAC

OBJECTIVES

To evaluate and/or design new methods for improving diagnostic laboratory procedures in mycobacteriology and to maintain an in-depth data base of laboratory results on tuberculous patients.

TECHNICAL APPROACH

Continuing projects are designed to use clinical materials from FAMC tuberculosis service patients. Specific studies under this project: (I) Comparison of Middlebrook 7H11 OA Agar with Modifications thereof, in an effort to improve isolation of mycobacteria from clinical specimens; (II) Tests for identification of mycobacterial species; (III) Evaluation of drug susceptibility test medium; (IV) Characterization of non-mycobacterium tuberculosis species isolated from experimental medium; (V) characterization of contaminants growing on experimental medium; (VI) comparison of smears before and after decontamination to determine possible loss of staining characteristics and viability.
Manpower (in professional man years): 0.7/yr

Funding (in thousands)	FY 77:	1.8
	FY 78:	1.8

PROGRESS

Evaluation of Mitchison's selective OA agar (PACT) for the isolation of mycobacterium species from raw clinical specimens has continued,

WORK UNIT 74/300

PROGRESS - continued

and the medium has proven efficacious; however, occasional unusual contaminants have grown. Currently these unusual gram negative and gram positive contaminants are now being characterized.

The mycobacterium species other than tuberculosis (MOTT) continued to be isolated but there appears a distinct change in the species currently isolated to predominately Gp III, Avium Intracellulare Complex.

Evaluation of P-nitrophenyl-B-D glucoside (PNPG) test is continuing in order to determine its ability to differentiate various mycobacterium.

A careful study of smears made before and after decontamination has been initiated in order to determine at which point during processing slide studies should be initiated to obtain maximum sensitivity. In addition data will be collected which may be helpful in modifying decontamination procedures to further improve the sensitivity of current specimen processing.

A pilot study comparing PACT as a base medium and routine medium for drug susceptibility studies indicated that for direct determination the correlation of the PACT with routine medium is excellent. Evaluation of these two types of media is ongoing based on specimen availability.

Publications:

Kolb, J.G., Rothlauf, M.V., and G.L. Brown: Isolation of Mycobacterium kansasii on Mitchison's Selective 7H11 medium. (Abstract) American Society for Microbiology, C-69:47, 1977.

Presentations:

Kolb, J.G., Rothlauf, M.V., and G.L. Brown: Isolation of Mycobacterium kansasii on Mitchison's Selective 7H11 Medium. American Society for Microbiology, New Orleans, Louisiana, May 1977.

Brown, G.L., and M.V. Rothlauf: Effects of Alpha-tocapheral and/or Altitude Stress on BCG Vaccinated Mice. National Jewish Hospital, Denver, Colorado, June 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Depletion of Liver Glycogen During Endotoxemia.

WORK UNIT NO.: 74/303

PRINCIPAL INVESTIGATOR: Thomas P. O'Barr, Ph.D., DAC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To examine the possibility that the hypoglycemic state present in endotoxin-poisoned animals results from the over production of insulin.

TECHNICAL APPROACH

Two hundred gram Holtzman rats, which were injected eighteen hours prior to use with saline or 100 ug of Salmonella Typhimurium endotoxin, were anesthetized with pentobarbital, and the pancreas prepared for perfusion according to the technique of Sussman et al. (Metabolism 13:466-476, 1966). Various concentrations of glucose were perfused through the organ and the effulent examined for immunoreactive insulin.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

No progress was made during this fiscal year.

Publications and Presentations: None

STATUS

Terminated.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Immuno-Surveillance Monitoring in Post Surgery Cancer Patients as Means of Evaluating Anti-Tumor Response.

WORK UNIT NO.: 75/303

PRINCIPAL INVESTIGATOR: George L. Brown, LTC, MSC

ASSOCIATE INVESTIGATORS: Joseph H. Baugh, COL, MC
Richard M. Hirata, COL, MC

OBJECTIVES

To evaluate tumor cell-mediated immunity and immuno-surveillance mechanisms in breast and colorectal cancer patients post-operative at different stages of disease.

TECHNICAL APPROACH

Heparinized and clotted blood samples (10-20 cc) are obtained at the time of surgery; when available, 1-3 gm of tissue from the excised tumor is also obtained. Additional heparinized and clotted blood samples are obtained at monthly intervals. Soluble tumor components are extracted from tumor by standard technique and are used as stimulants on lymphocytes. Serum samples are evaluated for immunoglobulin content (i.e., IgG, IgM, IgA, alpha 1 glyco-protein), serum protein electrophoretic profile, and carcinoembryonic antigen. Cellular immuno mechanism is also evaluated monthly after surgery by lymphocyte blast transformation technique using mitogenic stimulation with phytohemogglutinin, conconavalin A and pokeweed mitogen. Peripheral lymphocytes are quantitated as to percent thymic derived lymphocyte population with SRBC "rosette" test.

Manpower (in professional man years): 1.0/yr

Funding (in thousands) FY 77: 2.0
FY 78: 0.7

PROGRESS

A total of 33 patients which included 16 breast and 21 colon cancer types were evaluated during a two year study for periods of two to eleven months each. Each patient placed on study on date of surgery with

WORK UNIT NO.: 75/303

PROGRESS - continued

follow-up monthly intervals. Approximately 50% of these patients post surgery were subjected to cancer chemotherapy. Serum protein profiles for IgG, IgM, IgA, C_3 and C_4 and electrophoretic scans were recorded within normal limits. Serum alpha 1 acid glycoprotein in ca. 70% patients were elevated on first sample tested with normalization within two months post surgery; in two instances of metastasis, this protein remained elevated during course of disease. Marked suppression of lymphocyte blast transformation to PHA was noted within two weeks post surgery with normalization within two months. Stimulation indices were similar in non-chemotherapeutic treated and non-treated groups.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Mechanisms of Vitamin D Induced Calcium Transport.

WORK UNIT NO.: 76/300

PRINCIPAL INVESTIGATOR: Art Charles, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

Futher characterization of vitamin D induced transcriptional event as it relates to calcium transport processes on polar cells.

TECHNICAL APPROACH

The isolation of mRNA involving proteins thought to be related in calcium transport by gel and chromatographic methods.

Manpower (in professional man years): .0/yr

Funding (in thousands) FY 77: .5
FY 78: .0

PROGRESS

Because of manpower shortages this protocol has been unable to be continued.

Publications:

1. Charles, M.A.: Regulation of CaBP Specific m-RNA by 1,25-D_3. The Endocrine Society 1978.

Presentations:

1. Charles, M.A.: Regulation of CaBP Specific m-RNA by 1,25-D_3. Presented: 1978 National Endocrine Meetings.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Pancreatic Islet Transplantation in Diabetic Animals.

WORK UNIT NO.: 76/301

PRINCIPAL INVESTIGATOR: Art Charles, LTC, MC

ASSOCIATE INVESTIGATORS: Ed Dodson, MAJ, MC
Brahma Sharma, M.D., (Childrens Hospital)
Larry True, M.D., (University of Colorado Medical Center)

OBJECTIVES

Information derived from islet transplantation experiments indicates that diabetes mellitus can be effectively treated in animals. For this treatment approach to become practical in humans it appears obligatory to achieve effective animal allograft islet transplants. This goal has not been realized and thus the current protocol directly attempts to perform allogeneic islet transplantation in diabetic animals.

TECHNICAL APPROACH

Rat colonies isolated at FAMC in three different strains: Lewis, Wistar Furth, and Fischer strains have been established at FAMC. The Lewis and Fischer strains share major rat histocompatibility antigens whereas Wistar Furth strains of rat does not share the major histocompatibility antigens with Lewis or Fischer. Pancreatic islets are isolated and purified from donor strain animals and under various conditions are transplanted to Lewis recipient animals. The assessment of transplantation success is made by measurement of daily urine volumes and 24-hour urine glucose excretion in addition to serum glucose values. Immunological studies of the transplantation are performed by immunization of rabbits by rat islet antigen from crude islet homogenates. Lymphocyte transformation studies were performed to assess cell mediated transplantation rejection phenomenon by isolating lymphocytes from transplant and control animals and incubating these lymphocytes with donor islet tissues as well as phytohemagglutinin as a control. Lymphocytes are also in the progress of being enriched for specific subpopulations including T-cells and B-cells. Macrophages have been also isolated by the principal investigator. Isolated rat islet B-cell preparations will be performed using a Danase technique.

WORK UNIT NO.: 76/301

TECHNICAL APPROACH - continued

Upon the completion of the above technology, lymphocyte cytotoxicity studies will be performed in animals after transplantation. The experiment is also in progress which involves isolation of Lewis lymphocytes and Wistar Furth lymphocytes for mixed lymphocyte culture. Purified T-cells will be used as responder cells and after optimum incubation of mixed lymphocyte cultures, lymphoblast will be isolated by albumin gradient techniques. Lymphoblasts of the T-cell series will be used as a immunogen into potential islet recipients (Lewis). Rat Livers transplanted with isografts (Lewis) and allografts (Wistar Furth) islets are being studied by immunohistochemical techniques to define humoral immunity factors involved in the rejection phenomena.

Manpower (in professional man years): 1.5/yr

Funding (in thousands)		
	FY 77:	6.0
	FY 78:	8.0

PROGRESS

Biochemical data from isografted Lewis rats indicate that the transplantation is effective within 10 days and last for approximately two years in diabetic Lewis recipients. Allograft transplants of Wistar Furth islets transplanted to Lewis animals shows transplantation rejection by 5 days in all cases. Histologic examination of islets transplanted into recipient livers indicate that marked cellular infiltrates are present by day 5 consistent with, but not proving that cell mediated immunity is involved in the rejection process. Immunological studies of transplant recipient lymphocytes from allografted animals and controls indicates that lymphocytes from allograft recipients transform the presence of islet antigen in vitro in normal animals but not in diabetic animals. Further studies indicate that diabetes impairs lymphocyte transformation in vitro. Studies of other inbred strains reveal that Fischer to Fischer isografts are accepted only in 2 of 6 instances. Three of 3 Wistar Furth to Wistar Furth isografts revealed partial cure of diabetes. Thus the strains used in these experiments indicate that Lewis animals are highly inbred, Wistar Furth animals are less highly inbred and the Fischer strain is the most outbred of the three strains used in these experiments. Studies are in progress at present to determine of specific families of Fischer animals can be isolated to yield inbred animals, thus enabling one to look at non-major histocompatibility barriers in transplantation rejection since Fischer and Lewis rats have the same major histocompatibility locus, B_1.

WORK UNIT NO.: 76/301

PROGRESS - continued

Techniques are currently being established to isolate T- and B-cells from Lewis animals as well as other strains for use in antiidiotypic antibody immunization procedures as described by Wigzell. Current studies are aimed at optimzation of mixed lymphocyte culture techniques using rat lymphocytes from Wistar Furth and Lewis animals with the former acting as stimulator cells and the latter acting as responder cells. Responder T-lymphoblast will be purified by gradient sedimentation and used for immunization of Lewis recipients.

Islet culturing procedures have been developed enabling in vitro culture of islets for greater than 5 days and preliminary results indicate that high oxygen tension up to 5 days partially successful islet transplantation can be achieved. Conditions of these cultures include high oxygen tension which has been demonstrated to be effective in allograft transplantation in the mouse thyroid allotransplant system.

Publications:

Charles, M.A.: Islet Allograft Transplantation in Diabetic Rats. Diabetes 26: 1978.

Presentations:

Charles, M.A.: Islet Allograft Transplantation in Diabetic Rats. Presented: American Diabetes Association National Meeting 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Rosette Formation by T-Lymphocyte: I. Assay Method Using Primate Erythrocyte II. Assay Method Using Sheep Erythrocyte Treated with Neuraminidase.

WORK UNIT NO.: 76/302

PRINCIPAL INVESTIGATOR: George L. Brown, LTC, MSC, Ph.D.

ASSOCIATE INVESTIGATORS: Donald D. Paine, DAC, B.S.

OBJECTIVES

An evaluation of the rosette assay using primate erythrocytes and neurominidase treated sheep erythrocytes for human T-lymphocyte detection.

TECHNICAL APPROACH

Lymphocytes are isolated by Hypaque Ficoll sedimentation technique; T-lymphocyte population are evaluated with standard SRBC rosette test. Sheep erythrocytes are treated with neuraminidase and are tested for rosette formation in parallel with nontreated SRBC. Erythrocytes from Macaque nemestrina are studied for ability to form rosettes with human T-lymphocytes.

Manpower (in professional man years): 0.5/yr

Funding (in thousands)		
	FY 77:	0.6
	FY 78.	0.6

PROGRESS

Results of this study, based on test sensitivity, reproducibility, shelf life of erythrocyte storage and percentage of rosette formation, showed that the neuraminidase treated SRBC as the optimal system for the rosette test. Nonreproducible results, low counts, and decreased shelf life of erythrocytes were recorded with primate and nonneuraminidase-treated SRBC. Currently, neurominidase treated sheep erythrocytes have been adapted as standard erythrocytes for the rosette test.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Effect of Physical Stress on the Cellular and Humoral Immune Mechanisms in Mice.

WORK UNIT NO.: 76/303

PRINCIPAL INVESTIGATOR: George L. Brown, LTC, MSC, Ph.D.

ASSOCIATE INVESTIGATOR: Joseph Lima, DAC, B.S.

OBJECTIVES

A study to evaluate the effects of maximum physical stress on mice during antigenic stimulation on immunoglobulin synthesis, lymphocyte transformation and secretion of antibody from splenic lymph node cells.

TECHNICAL APPROACH

The amount of physical stress to reach the fatigue stage is recorded; animals were swam to exhaustion. Mice were initially adapted to swimming-shock by being allowed to swim (5 minutes for one week prior to final study). Fatigued and non-fatigued mice groups are immunized intraveniously with sheep erythrocyte (SRBC) and developing anti-SRBC globulin is studied by direct and passive hemagglutination tests. Antibody producing lymphoid cells were estimated from splenic lymphoid-cell material (Jerne Plaque Test). At intervals post immunizations, lymphocyte blast transformation to phytohemagglutinin mitogen is studied.

Manpower (in professional man years): 0.5/yr

Funding (in thousands)		
	FY 77:	0.8
	FY 78:	0.4

PROGRESS

Four test groups of mice were evaluated: (1) control group, non-immunized; (2) stressed group, non-immunized; (3) non-stressed group, immunized; (4) stressed group, immunized. Serum pools and splenic lymphoid cells were studied for anti-SRBC titers and anti-SRBC lymphocyte producing cells, respectively. Splenic and body weights and lymphocyte blast transformation

WORK UNIT NO.: 76/303

PROGRESS - continued

were evaluated. Results recorded showed no significant differences in body and spleen weights and anti-SRBC titers in the fatigued vs. non-fatigued groups. Similarly, no differences in lymphocyte blast transformation was recorded in all groups studied (P=0.52). Of interest, plaque antibody cells (splenic lymphoid element) was increased in the immunized groups (stressed and non-stressed) on the 4th day post stimulation.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Calcium Metabolism in Diabetes Mellitus.

WORK UNIT NO.: 76/304

PRINCIPAL INVESTIGATOR: Art Charles, LTC, MC

ASSOCIATE INVESTIGATORS: Gary Treece, MAJ, MC
Fred Hofeldt, LTC, MC
PHil O'Barr, Ph.D., DAC

OBJECTIVES

To determine if diabetes mellitus in humans is associated with renal unresponsiveness to parathyroid hormone. If this hypothesis is true, it could explain the bone demineralization asssociated with diabetes mellitus.

TECHNICAL APPROACH

Patients with diabetes but not on therapy will be assessed prior to being placed on therapy. If the assessment demonstrates no emergent need for diabetic control, the patient will be included into the study at which time the patient will be infused with thyroid hormone, and the patient's blood and urine will be analyzed for cyclic AMP, 125 Vitamind D_3 and in addition to other variables such as phosphate and calcium to prove or disprove whether diabetic kidneys are resistant to parathyroid hormone.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: .0
FY 78: 0.1

PROGRESS

Four patients have been studied since the institution of this protocol; however, samples have not been assessed for cyclic AMP or Vitamin D_3 levels because of manpower limitations.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Standardization of Hypoglycemic Criteria using a Physiological Stimulus.

WORK UNIT NO.: 76/305

PRINCIPAL INVESTIGATOR: Art Charles, LTC, MC

ASSOCIATE INVESTIGATORS: Fred Hofeldt, LTC, MC
Ed Dodson, MAJ, MC
Anna Lee Shackelford, M.T., DAC

OBJECTIVES

To establish criteria defining normal postprandial blood glucose and glucoregulatory hormone concentrations following a test meal which provides more physiologic stimulus than pure glucose and to compare these data with the traditional oral glucose tolerance test. Also to observe whether patients thought to have idiopathic reactive hypoglycemia do in fact have low postprandial blood glucose on altered levels of glucoregulatory hormones associated with clinical findings following the test meal.

TECHNICAL APPROACH

Patients and normals will be given a test meal consisting of Figurines containing about a third of the daily caloric and protein carbohydrate and fat intake following which time multiple tests will be performed looking at glucose homeostasis.

Manpower (in professional man years): 0.20/yr

Funding (in thousands)		
	FY 77:	.05
	FY 78:	0.20

PROGRESS

Eighteen patients presenting to the FAMC Endocrine Clinic with a tentative diagnosis of reactive hypoglycemia have been evaluated using glucose tolerance testing and figurine tolerance testing. It is clear and there are no exceptions that patients having symptoms of post prandial reactive hypoglycemia episodes that have

WORK UNIT NO.: 76/305

PROGRESS - continued

been documented by glucose tolerance tests are not hypoglycemic during their similar symptoms after the test meal. Insulin, cortisol and glucagon levels will be compared with age, sex, and weight matched controls that are currently being performed. Approximately nine controls have been so studied. During the study of 18 patients it has become apparent that 4 of the 18 patients have elevated levels of immunoreactive glucagon that have been evaluated by gel filtration techniques. The elevated immunoreactive glucagon is not authentic 3500 mw glucagon but rather a large mw species exceeding 200,000 mw that has not been described in the literature and after conversations with various leaders in the field of glucagon physiology including Dr. Roger Unger it is apparent that the substance that we are measuring is unique.

Publications:

1. Charles, M.A.: The Absence of Hypoglycemia After a Test Meal in Patients with Idiopathic Reactive Hypoglycemia. Diabetes 26, 1978.

2. True, L., Charles, A., Lewis, H., Katz, F., Waldeck, N., and P. Nakane: A Pseudoglucagonoma Syndrome. To be published Clinical Research 1979.

3. Charles, M.A., Waldeck, Nancy, and T.P. O'Barr: Excessive High Molecular Weight Immunoreactive Glucagon Levels in Patients with the Post Prandial Syndrome. To be published Clinical Research 1979.

Presentations:

1. Charles, M.A.: The Absence of Hypoglycemia After a Test Meal in Patients with Idiopathic Reactive Hypoglycemia. Presented: American Diabetes Assocation National Meeting 1978.

2. True, L., Charles, A., Lewis, H., Katz, F., Waldeck, N., and P. Nakane: A Pseudoglucagonoma Syndrome. To be Presented: Western Society Meetings, American Federation for Clinical Research, February 1979.

3. Charles, M.A., Waldeck, Nancy, and T.P. O'Barr: Excessive High Molecular Weight Immunoreactive Glucagon Levels in Patients with the Post Prandial Syndrome. To be Presented: Western Society Meetings, Western Society for Clinical Research, February 1979.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Group A Beta Hemolytic Streptococcus in the Asymptomatic Child I Seasonal Incidence of the Carrier State II Bacterial Interference of the Carrier State by Normal Throat Flora.

WORK UNIT NO.: 76/306

PRINCIPAL INVESTIGATORS: George L. Brown, LTC, MSC, PhD
Donald G. Corby, COL, MC
Harry S. Spaulding, COL, MC
Warren A. Todd, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

In depth evaluation of seasonal incidence of group A beta hemolytic streptococcus and bacterial interference of the carrier state by normal throat bacterial flora.

TECHNICAL APPROACH

Nasal and pharyax impression smears will be obtained by means of standard cotton-swab technique from healthy children (6-15 age) during annual physical examination. All individuals found positive for group A beta hemolytic streptococcus for (GABHS), positive test group, will be re-cultured for additional C-8 intervals. Isolated GABHS are further studied for type specific serotype and sub-grouping. GABHS positive subjects are re-evaluated for inhibitory activity of own normal throat flora against own isolated GABHS strain.

Manpower (in professional man years) 1.2/yr

Funding (in thousands) FY 78: 1.3

PROGRESS

A total of 1046 healthy children (4-16 age) were studied for presence of GABHS and presence of "interference" organisms of these, 141 (13.8%) were found positive for GABHS; non-group A BHS was isolated from 210

WORK UNIT NO.: 76/306

PROGRESS - continued

(20.1%) children. The non-group A BHS isolates showed 13 (7%) group B, 16 (8.6%); group C, 59 (31.6%); group F, 63 (33.7%); group G and 36 (19.3%) non-typables. Of the positive GABHs, 40% were from subjects with no previous infections; 21% within 12 months, 27% within 24 months and 13% within 36 months. A higher incidence of "interference" was seen in children with non-group A isolates as compared to the positive GABHS group.

Publications:

Brown, G.L., Calcagno, J.V., Cromwell, R., Tull, A.H. and W.A. Todd: Incidence of Group A beta-hemolytic Streptococcus in Healthy Children. (Abstract) American Soc. Microbiology, C15:38, 1977.

Presentations:

1. Todd, W.A., Brown, G.L., Tull, A.H., and R.K. Cromwell: Lack of Effect of Antibiotics on the Group A beta-hemolytic Streptococcal Carrier State. Presented. Western Society for Pediatric Research, Carmel, CA., 1978.

2. Todd, W.A., Brown, G.L., Tull, A.H., and R.K. Cromwell: The Lack of Effect of Antibiotics on the Group beta-hemolytic Streptococcal Carrier State. (TPA) Pediatric Tri-Service Meeting, San Diego, CA., 1978.

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Immunologic Disorders in Children and Adults: I. Correlation of Immune Functions in the Immunodeficiency State II. Correlation of Immune Functions of Leukemia and other Childhood Malignancies.

WORK UNIT NO.: 77/300

PRINCIPAL INVESTIGATORS: George L. Brown, LTC, MSC, Ph.D.
Donald G. Corby, COL, MC
James E. Shira, COL, MC

OBJECTIVES

Existing specialized immuno-chemical procedures will be consolidated into a registered protocol for use, on a consultative basis, by the hospital staff.

TECHNICAL APPROACH

A clinical laboratory immunology consultation service has been established. Main emphasis in performance and evaluation of specialized immuno-chemical tests, will be accumulation of scientific data, and laboratory facilities for training house-staff personnel. The major areas of studies include humoral and cellular immunity and leukocyte function evaluation. Patients are selected on the basis of seventy of recurrent infections, clinical immunodeficiency state, lack of response to medical management and availability for laboratory evaluations.

Manpower (in professional man years): 1.3/yr

Funding (in thousands) FY 77: 5.0
FY 78: 4.0

PROGRESS

A total of 112 patients were evaluated on consultative basis for immunologic disorders and/or hemoglobinopathies. During this period ten physician house-staff personnel were also trained in laboratory clinical immunology procedures (humoral and cellular). Patients studied:

WORK UNIT NO.: 77/300

PROGRESS - continued

94 in the area of applied immunology (cellular and humoral) and 21 for special studies of abnormal hemoglobulins. Subjects with indicated major findings were as follows: I. Hemoglobinopathies, Hb species described: 1 HbC trait, 3 HbS disease, 11 HbS trait, 1 HbS beta thala., 1 beta thal., and 1 Hb SC. II. Applied immunology (a) serum protein profile evaluations: 31 cryoglobulinemias (7 IgG, 1 IgM, 14 IgG-IgM, 7 IgG-IgM-IgA, 2 C_3), 79 serum protein gammapathies (63 monoclonal dysproteinemia types, 16 polyclonal dysproteinemia types) (b) cellular immune profile studies: 91 lymphocyte blast transformation evaluations (PHA, Con A, Pokeweed Mitogen) to include T-lymphocyte enumeration. Of these, 22 and 28 were found suppressed post PHA and PWM mitogen stimulation respectively; 15 patients for T-rosette (total 91 patients) had less than 47% SRBC rosette counts. (c) leukocyte function studies--8 neutrophil chemotaxis evaluations (Boydens Chauler Technique), 14 chemiluminescence determinations and 12 for nitroblue tetrazolium tests. One patient found to have suppressed chemotaxis and NBT tests.

Publications: None

Presentations:

Brown, G.L. and J. Lima: Assessment of Cell Mediated Immunity in Children and Adults: Pediatric Department Seminar, FAMC, Denver, CO., October 1978.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Thyroglobulin Levels in Patients with Thyroid Carcinoma.

WORK UNIT NO: 77/301

PRINCIPAL INVESTIGATOR: Art Charles, LTC, MC

ASSOCIATE INVESTIGATORS: Ed Dodson, MAJ, MC
Fred Hofeldt, LTC, MC
Phil Burstein, M.D. (University of Colorado Medical Center)

OBJECTIVES

To determine if thyroglobulin serum levels reflect the occurrence of thyroid carcinoma metastases.

TECHNICAL APPROACH

A radioimmunoassay has been designed to measure circulating thyroglobulin levels in humans by isolating the thyroglobulin protein from human thyroid glands by column chromatographic techniques. Following the isolation of pure human thyroglobulin the protein was injected into rabbits on a pre-determined immunization schedule and rabbit serum was harvested for analysis of antihuman thyroglobulin antibodies. Radioactive Iodine 125 thyroglobulin is prepared by the chloramine T method. Following the development of the radioimmunoassay for serum thyroglobulin determination normals and patients were studied to determine various levels under different clinical situations. All patients studied with thyroid carcinoma had concomitant total body thyroid scanning procedures. Patients are studied in various stages of therapy following the diagnosis of thyroid carcinoma.

Manpower (in professional man years): 0.2/yr

Funding (in thousands)	FY 77:	3.5
	FY 78:	0.20

PROGRESS

The above immunoassay has been developed and has been shown to be sensitive to less than 1.25ng/ml of circulating thyroglobulin. Forty-nine normal volunteers have been evaluated with the normal range being 0-15ng/ml. Concomitant with all specimens run is a thyroglobulin

WORK UNIT NO.: 77/301

PROGRESS - continued

antibody technique and all patients with thyroglobulin binding greater than 10% are excluded from this study. Approximately 70 patients have been studied for serum thyroglobulin levels concomitantly with total body scanning procedures. By comparing the serum thryoglobulin level with total body thyroid scanning techniques it is apparent that the blood test is very efficient in predicting the result of the total body scan (chi square analysis highly significant less than 0.001).

Publications: None

Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Regulation of 1,25-Dihydroxycholecalciferol ($1,25\text{-}D_3$) in Humans.

WORK UNIT NO.: 77/302

PRINCIPAL INVESTIGATOR: M. Arthur Charles, LTC, MC

ASSOCIATE INVESTIGATORS: Ed Dodson, MAJ, MC
Dave Zolock, CPT, MSC, PhD

OBJECTIVES

To determine if in vivo regulation of plasma $1,25\text{-}D_3$ is mediated by calcium or parathyroid hormone (PTH).

TECHNICAL APPROACH

Measurement of serum $1,25\text{-}D_3$ by techniques involving plasma extraction gel filtration, high pressure chromatography, and radioligand assay involving vitamin D binding protein isolated from rachitic chick gut.

Manpower (in professional man years): .2/yr

Funding (in thousands) FY 78: 4.0

PROGRESS

The $1,25\text{-}D_3$ serum assay has been developed in this laboratory by the principal investigator and although this assay has required approximately 1.5 years to develop current manpower quality shortages have made this protocol impossible to perform. The techniques utilizing this protocol have been performed by the principal investigator and by one of the medical residents rotating through the Clinical Investigation Service, however, technical support, because of the nature of this difficult assay has been inadequate.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERIVCE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Osteosarcoma.

WORK UNIT NO.: 77/304

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATOR: William J. Zwartjes, M.D., Children's Hospital
R. Eugene Lienert, M.D., Presbyterian Medical Center
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

A. To increase survival and cure of patients with osteosarcoma.

B. To preserve optimal function in the affected limb.

C. To determine incidence, extent and duration of objective regressions of both localized and metastatic osteosarcoma to combined modality therapy.

D. To compare incidence, extent and duration of objective response of localized tumors treated with immediate amputation, versus those treated with high-dose radiation with/without delayed amputation.

E. To correlate degree of response to treatment with total time of tumor-free survival.

F. To correlate degree of response with median survival in patients presenting with metastases.

G. To compare tumor-free survival and median survival on this protocol retrospectively with those described for other treatment protocols.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with osteosarcoma, medium selection criteria, as outlined in the protocol will be treated with combined modality therapy.

WORK UNIT NO.: 77/304

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date no FAMC patients with osteosarcoma have been enrolled in this program. The new Chief of Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979.

Publications and Presentations: None.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Neuroblastoma (Stage III, IV) After Infancy.

WORK UNIT NO.: 77/305

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: Lorrie Furman Odom, M.D., Children's Hospital
Taru Hays, M.D., Children's Hospital
R. Eugene Lienert, M.D., Presbyterian Medical Center
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

A. To aggressively treat the child presenting after the age of one year with disseminated neuroblastoma with combination radiation therapy, multiple drug chemotherapy, and immunotherapy.

B. To prospectively evaluate the efficacy of partial tumor resection in patients with known disseminated disease.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with Neuroblastoma, medium selection criteria, as outlined in the protocol will be treated with combined modality therapy.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date no FAMC patients with neuroblastoma have been enrolled in this program. The new Chief of Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979.

WORK UNIT NO.: 77/305

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Rhabdomyosarcoma Protocol.

WORK UNIT NO.: 77/306

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: David Tubergen, M.D., Children's Hospital
William J. Zwartjes, M.D., Children's Hospital
Richard Heideman, M.D., Children's Hospital

OBJECTIVES

1. To maintain good survival rates with best available therapy in Stage I disease by the use of chemotherapy following complete resection of the tumor.

2. To maintain good survival rates with best available therapy in Stage II and III disease by use of VAC therapy (vincristine, dactinomycin, cytoxan) following appropriate treatment to the local tumor. This may include either surgery before or after chemotherapy or the combination of surgery, chemotherapy and radiation.

3. To decrease morbidity of treatment in Stage II and III disease by avoiding mutilating surgery through the use of chemotherapy prior to the surgery to reduce bulk disease and make the surgical resection less destructive.

4. To determine the response rate of late stage rhabdomyosarcoma to a combination of chemotherapy including cytoxan, vincristine, dactinomycin, adriamycin and DTIC.

5. To determine host toxicity and tolerable levels of this five drug treatment in late stage disease.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the

WORK UNIT NO.: 77/306

TECHNICAL APPROACH - continued

auspices of the Denver Regional Cancer Center. Patients with Rhabdomyosarcoma, medium selection criteria, as outlined in the protocol will be treated with combined modality therapy.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date no FAMC patients with Rhabdomyosarcoma have been enrolled in this program. The new Chief of Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Protocol for the Treatment of Ewing's Sarcoma.

WORK UNIT NO.: 77/307

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: William Zwartjes, M.D., Children's Hospital
R. Eugene Lienert, M.D., Presbyterian Medical Center
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

A. To produce prolonged survivals and opitmally, cures in Ewing's Sarcoma.

B. To determine incidence, extent and duration of objective regressions of both localized and metastatic Ewing's Sarcoma to high-dose radiation and combined chemotherapy utilizing vincristine, cytoxan, adriamycin and dactinomycin in metastatic disease.

C. To correlate response with tumor-free survival.

D. To correlate response with median survival in patients presenting with metastases.

E. To compare tumor-free survival and median survival on this regimen retrospectively with those described for other treatment methods.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with Ewing's Sarcoma, medium selection criteria, as outlined in the protocol were treated with combined modality therapy.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

WORK UNIT NO.: 77/307

PROGRESS

The new Chief Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979. To date one patient has been entered in the study.

September 1978 - C.M. - 11 y/o female, Ischium - transferred to private physician.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Non-Hodgkins Lymphoma.

WORK UNIT NO.: 77/308

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: Taru Hays, M.D., Children's Hospital
R. Eugene Lienert, M.D., Presbyterian Medical Center
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital
Richard Heideman, M.D., Children's Hospital

OBJECTIVES

The purpose of this study is to improve the chances of achieving a complete remission, as well as to hopefully prolong the duration of complete remission in children with non-Hodgkin's lymphoma.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with Non-Hodgkins Lymphoma, medium selection criteria, as outlined in the protocol will be treated with combined modality therapy.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date no FAMC patients with non-Hodgkins lymphoma have been enrolled in this program. The new Chief of Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: AL # 4 - Acute Lymphocytic Leukemia.

WORK UNIT NO.: 77/309

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: Lorrie Furman Odom, M.D., Children's Hospital
R. Eugene Lienert, M.D., Presbyterian Medical Center
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

A. To increase the number of long-term survivors of acute lymphogenous leukemia.

B. To evaluate the clinical efficacy of immunological potentiation by BCG between 6-day courses of combination chemotherapy given every 3 weeks, with regard to remission duration and frequency of infections.

C. To assess the effect of BCG on *in vitro* parameters of immunological function, such as numbers of T and B lymphocytes, lymphocyte cytotoxicity to autologous lymphoblasts, antibodies to BCG and tumor antigen, and monocyte-macrophage function.

D. To determine if prolonged administration of BCG leads to antigenic competition by following sequential *in vitro* lymphocyte blastogenesis to diptheria and tetanus antigens.

E. To develop prognostic criteria based on histology with special stains (PAS, Sudan, Peroxidase, Alpha naphthal acetate esterase, Chloracetate esterase), electron microscopy, and T and B cell determination.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with AL #4 - Acute Lymphocytic Leukemia, medium selection criteria, as outlined in the protocol were treated with combined modality therapy.

WORK UNIT NO.: 77/309

TECHNICAL APPROACH - continued

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date two patients have been entered in the study. The new Chief Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979.

December 1978 - D.J. - 14 y/o male - initial remission.
December 1978 - J.C. - 2 y/o male - initial remission.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Acute Non-Lymphogenous Leukemia.

WORK UNIT NO.: 77/310

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: Lorrie Furman Odom, M.D., Children's Hospital
Taru Hays, M.D., Children's Hospital
R. Eugene Lienert, M.D., Presbyterian Medical Center
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

A. To increase the duration of complete remission in children with ANLL.

B. To determine whether administration of 2400 rads cranial irradiation and intrathecal Ara-C as soon as remission is achieved decreases the incidence of CNS leukemia when compared to historical controls.

C. To determine the clinical efficacy of adding BCG applied by Heaf gun to aggressive intermittent combination chemotherapy in the treatment of children with ANLL.

D. To follow in vitro parameters of immunological function, such as numbers of T and B lymphocytes, lymphocyte cytotoxicity to autologous blasts, antibodies to BCG and tumor antigen, and monocyte-macrophage function, and to determine if they correlate with remission or relapse.

E. To determine if prolonged administration of BCG leads to antigenic competition by following sequential in vitro lymphocyte blastogenesis to diptheria and tetanus antigens.

F. To determine if cytochemical and ultrastructural features of the blast cells correlate with prognosis.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with Acute Non-Lymphogenous Leukemia, medium selection criteria, as outlined in the protocol will be treated with combined modality therapy.

WORK UNIT NO.: 77/310

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date no FAMC patients with Acute non-lymphogenous leukemia have been enrolled in this program. The new Chief of Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Wilms' Tumor (Nephroblastoma).

WORK UNIT NO.: 77/311

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: Taru Hays, M.D., Children's Hospital
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

A. To produce prolonged disease free survivals and cures of Wilms' tumor.

B. To evaluate adriamycin in the treatment of Stages 3B and 4 of this disease.

C. To compare disease free survival and median survival on this protocol retrospectively and concurrently with treatment regimens used in other institutions.

D. To monitor the toxicity and observe the incidence of long range side effects of our irradiation and chemotherapeutic treatments.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with Wilms' Tumor, medium selection criteria, as outlined in the protocol will be treated with combined modality therapy.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date no FAMC patients with Wilms' Tumor have been enrolled in this program. The new Chief of Pediatric Hematology/Oncology, MAJ Mosijczuk will assume the role of principal investigator of this protocol effective 1 January 1979.

WORK UNIT NO.: 77/311

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: CNS Tumor Protocol for Study of Combined Surgery, Chemotherapy and Radiotherapy.

WORK UNIT NO.: 77/312

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: Richard L. Heideman, M.D., Children's Hospital
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

To determine the effects of combination surgery, chemotherapy and radiation in previously untreated or relapsing patients with central nervous system tumors. Data will be compared to historical controls obtained with surgery and radiation alone.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with CNS Tumor, medium selection criteria, as outlined in the protocol were treated with combined modality therapy.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

The new Chief Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979. To date one patient has been enrolled in the study.

November 1978 - R.R. - 3 y/o male - Glioblastoma Multiforme - relapse

WORK UNIT NO.: 77/312

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Beta-Sympathetic Mediated Metabolic Events Following a Carbohydrate Loading.

WORK UNIT NO.: 78/300

PRINCIPAL INVESTIGATOR: M. Arthur Charles, LTC, MC

ASSOCIATE INVESTIGATORS: Clifford W. Zwillich, M.D., (University of Colorado Medical Center)
Fred Hofeldt, LTC, MC
Kenneth Burman, MAJ, MC (Walter Reed Army Medical Center)

OBJECTIVES

Previous studies by the present investigators have demonstrated that a number of metabolic and respiratory changes occur in response to the ingestion of a carbohydrate meal. The objective of the present study is to evaluate beta sympathetic mediated metabolic and respiratory responses to the ingestion of a carbohydrate meal before and after propranolol blockade.

TECHNICAL APPROACH

Normal subjects were given 250 gm oral glucose load before and after beta sympathetic blockade which was assessed by isuprel infusion induced changes in heart rate. After dense beta blockade mulitple measurements were performed including thyroxine, triiodothyronine, and reverse triiodothyronine as well as glucagon and free fatty acids.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0.5

PROGRESS

This protocol has been completed and includes six normal subjects studied before and after dense beta blockade.

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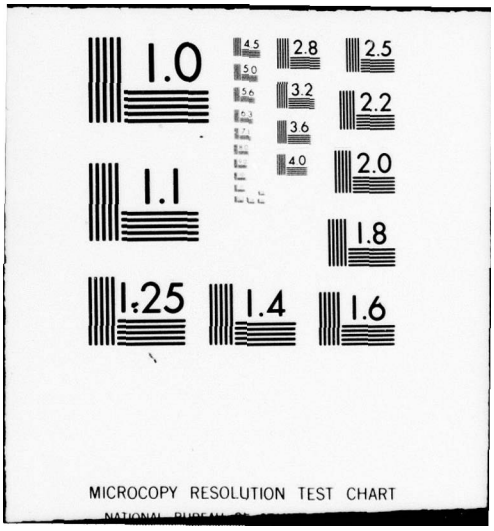
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MICROCOPY RESOLUTION TEST CHART

WORK UNIT NO.: 78/300

Publications:

Zwillich, C., Martin, B., Rose, E., Charles, A., Hofeldt, F., and Burman, K: The Effects of Dense Beta Sympathetic Blockade on Metabolic Rate and Thyroid Function in Normal Man. Submitted to Journal of Clinical Endocrinology & Metabolism for publication November 1978.

Presentations:

None

STATUS:

Completed.

OB-GYN

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of "Pereyra-Harer" Procedure in Treating Urinary Stress Incontinence.

WORK UNIT NO.: 67/351

PRINCIPAL INVESTIGATOR: Keith F. Deubler, COL, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To evaluate the Pereyra method of urethro-vesical suspension as a means of treatment for patients with true urinary stress incontinence.

TECHNICAL APPROACH

This project is an attempt to define the long-term effect of one type of surgical repair for urinary stress incontinence in the female. Patients with urinary stress incontinence receive a complete urological work-up. The Bonney-Marchetti-Read "Stress test" is used to select surgical candidates. The chain cystogram is utilized as described by Green to define cases as Type I or Kennedy urethro-vesical plications as the primary surgical procedure used for control of Krantz procedure or a Pereyra-Harer procedure, depending on whether an abdominal or vaginal approach is indicated by the patient's other symptoms and findings. The long-term follow-up is done through the modality of patient questionnaire on a six-month basis. This will ultimately give sufficient data to define the relative merits of different surgical approaches in our treatment of this clinical problem.

Manpower (in professional man years): 0.3/yr

Funding (in thousands):		
	FY 77	0
	FY 78	0

WORK UNIT 67/351

PROGRESS

The project is continuing as outlined with accumulation of patients and follow-up information. There are currently over 200 patients in this study with approximately 90 of them being followed after a "Pereyra" procedure.

Publications: None

Presentations:

(1) Buffone, D.: Evaluation of the "Pereyra-Harer" Procedure in Treating Urinary Stress Incontinence. Presented: The Armed Forces District Meeting of the American College of OB-GYN, Las Vegas, Nevada, October 1970.

(2) Woods, W.M.: Evaluation of the "Pereyra-Harer" Procedure in the Treatment of Urinary Stress Incontinence. Accepted for Presentation. Armed Forces District Meeting of the American College of OB-GYN, Washington, D.C., November 1975.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME

30 SEP 78

TITLE: Gynecologic Follow-up after Tubal Surgery for Sterilization.

WORK UNIT NO.: 73/353

PRINCIPAL INVESTIGATOR: Keith F. Deubler, COL, MC

ASSOCIATE INVESTIGATOR: Durell A. Hiller, CPT, MC

OBJECTIVES

1. To determine the incidence of GYN problems following tubal surgery for sterilization in a five-year postoperative follow-up.

2. To determine the failure rate of various types of tubal surgery for sterilization.

3. To determine complications (operative) of various types of tubal surgery for sterilization.

4. To determine morbidity (postoperative) from various types of tubal surgery for sterilization.

5. To determine patient's estimates of the value of the procedure.

TECHNICAL APPROACH

The long-term results of sterilization by tubal surgery as opposed to other means of sterilization will be evaluated by registering all these patients in the tumor registry and following their progress for several years by a questionnaire on a biannual basis.

Manpower (in professional man years): 0.1/yr

Funding (in thousands)	FY 77:	0
	FY 78:	0

WORK UNIT 73/353

PROGRESS

Data collection only, at present. Material collected has not been reviewed as yet. The three-year collection of cases is to be followed for five years and is to be maintained on these patients by questionnaire. The progress is initially the same as last year's.

Publications: None

Presentations:

(1) Hiller, D.A., Elliott, J.P.: Tubal Ligation Syndrome Myth or Reality. Presented: Armed Forces Division of ACOG, New Orleans, Louisiana, October 1977.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A Comparison of Serum Estriol Levels and Human Placenta Lactogen (HPL) Levels in the Management of Hypertensive and Vascular Disease in Pregnancy.

WORK UNIT NO.: 75/352

PRINCIPAL INVESTIGATOR: Keith F. Deubler, COL, MC

ASSOCIATE INVESTIGATOR: Thomas P. O'Barr, Ph.D., DAC

OBJECTIVES

The object of this study is to determine if HPL level obtained after the 30th week of gestation will be as effective in managing the outcome for mother and fetus as serum estriols which are currently being utilized at Fitzsimons Army Medical Center.

TECHNICAL APPROACH

During the 12 months from initiation of this study, all patients seen in the clinic or hospitalized with the diagnosis of hypertension in pregnancy, preeclampsia, glomerulonephritis, systemic lupus erythematosus, or other vascular diseases will be studied. Each patient will be studied from onset of clinical findings or 30 weeks' gestation until delivery.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 77: 2.5
FY 78: 2.5

PROGRESS

Preliminary evaluation of approximately 50 patients has been done. Results indicate the study should be continued to accumulate more data. The progress is initially the same as last year's.

Publications: None

WORK UNIT NO.: 75/352

Presentations:

(1) Edward J. Lazarus, MAJ, MC, is presenting the preliminary results at the Annual Armed Forces Seminar and 16th Annual District Meeting, American College of Obstetrics and Gynecology, October 1977.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of Ibuprofen (Motrin) in Dysmenorrhea.

WORK UNIT NO.: 76/350

PRINCIPAL INVESTIGATOR: William L. Black, MAJ, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To compare the relief of dysmenorrhea pain by Ibuprofen.

TECHNICAL APPROACH

Patients have been taken into the study and evaluated on either aspirin, placebo, or motrin for three consecutive cycles on each drug. The patients are filling our report cards with each cycle as to the amount of relief they have obtained and the amount of medication taken. These are returned after each set of three cycles and new drugs are obtained through the pharmacy.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Since the onset of the study, there have been 15 women enrolled in the study out of the required 48 women. We have been able to have completion of the first cycle on medication for three women. Results are being held for tabulation at the end. The doctors in OB-GYN Clinic will refer any patients with continuous dysmenorrhea to the Principal Investigator in an attempt to get them on the protocol for the evaluation of this medication. The progress is initially the same as last year's.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of the Role of Unrecognized Intrauterine Infection in Premature Labor and Premature Rupture of Membranes.

WORK UNIT NO.: 77/350

PRINCIPAL INVESTIGATORS: J.R. Bobitt, LTC, MC
G.L. Brown, LTC, PhD, MSC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To determine the presence, number and frequency of bacteria and mycoplasmatales in the amniotic fluid of patients presenting with premature labor and/or premature rupture of membranes.

TECHNICAL APPROACH

This study is a coordinated investigation between Department of Obstetrics and Gynecology and Clinical Investigation Service, Fitzsimons Army Medical Center. All administrative and professional care, including specimen collection and distribution to the Clinical Investigation Service, will be the responsibility of OB-GYN. The management and methodology for microbiological evaluation of specimens will be the responsibility of CIS, Microbiology Section.

Manpower (in professional man years): 0.0

Funding (in thousands) FY 78: 0.0

PROGRESS

All preliminary work to initiate the current study has been completed. No patients have been studied at this time. Two additional investigators are participating in the study, MAJ Damato of the Clinical Investigation Service and CPT Byars of the Department of OB-GYN.

Publications and Presentations: None

STATUS:

Ongoing.

WORK UNIT NO.: 77/310 [redacted]

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date no FAMC patients with Acute non-lymphogenous leukemia have been enrolled in this program. The new Chief of Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Wilms' Tumor (Nephroblastoma).

WORK UNIT NO.: 77/311

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: Taru Hays, M.D., Children's Hospital
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

A. To produce prolonged disease free survivals and cures of Wilms' tumor.

B. To evaluate adriamycin in the treatment of Stages 3B and 4 of this disease.

C. To compare disease free survival and median survival on this protocol retrospectively and concurrently with treatment regimens used in other institutions.

D. To monitor the toxicity and observe the incidence of long range side effects of our irradiation and chemotherapeutic treatments.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with Wilms' Tumor, medium selection criteria, as outlined in the protocol will be treated with combined modality therapy.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

To date no FAMC patients with Wilms' Tumor have been enrolled in this program. The new Chief of Pediatric Hematology/Oncology, MAJ Mosijczuk will assume the role of principal investigator of this protocol effective 1 January 1979.

WORK UNIT NO.: 77/311

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: CNS Tumor Protocol for Study of Combined Surgery, Chemotherapy and Radiotherapy.

WORK UNIT NO.: 77/312

PRINCIPAL INVESTIGATOR: Donald G. Corby, COL, MC

ASSOCIATE INVESTIGATORS: Richard L. Heideman, M.D., Children's Hospital
David Tubergen, M.D., Children's Hospital
Barbara Rose, Children's Hospital

OBJECTIVES

To determine the effects of combination surgery, chemotherapy and radiation in previously untreated or relapsing patients with central nervous system tumors. Data will be compared to historical controls obtained with surgery and radiation alone.

TECHNICAL APPROACH

The University of Colorado Medical Center, Denver Childrens Hospital and FAMC are cooperating in the study of this protocol as a group under the auspices of the Denver Regional Cancer Center. Patients with CNS Tumor, medium selection criteria, as outlined in the protocol were treated with combined modality therapy.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0

PROGRESS

The new Chief Pediatric Hematology/Oncology, MAJ Mosijczuk, will assume the role of principal investigator of this protocol effective 1 January 1979. To date one patient has been enrolled in the study.

November 1978 - R.R. - 3 y/o male - Glioblastoma Multiforme - relapse

WORK UNIT NO.: 77/312

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Beta-Sympathetic Mediated Metabolic Events Following a Carbohydrate Loading.

WORK UNIT NO.: 78/300

PRINCIPAL INVESTIGATOR: M. Arthur Charles, LTC, MC

ASSOCIATE INVESTIGATORS: Clifford W. Zwillich, M.D., (University of Colorado Medical Center)
Fred Hofeldt, LTC, MC
Kenneth Burman, MAJ, MC (Walter Reed Army Medical Center)

OBJECTIVES

Previous studies by the present investigators have demonstrated that a number of metabolic and respiratory changes occur in response to the ingestion of a carbohydrate meal. The objective of the present study is to evaluate beta sympathetic mediated metabolic and respiratory responses to the ingestion of a carbohydrate meal before and after propranolol blockade.

TECHNICAL APPROACH

Normal subjects were given 250 gm oral glucose load before and after beta sympathetic blockade which was assessed by isuprel infusion induced changes in heart rate. After dense beta blockade mulitple measurements were performed including thyroxine, triiodothyronine, and reverse triiodothyronine as well as glucagon and free fatty acids.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 78: 0.5

PROGRESS

This protocol has been completed and includes six normal subjects studied before and after dense beta blockade.

WORK UNIT NO.: 78/300

Publications:

Zwillich, C., Martin, B., Rose, E., Charles, A., Hofeldt, F., and Burman, K: The Effects of Dense Beta Sympathetic Blockade on Metabolic Rate and Thyroid Function in Normal Man. Submitted to Journal of Clinical Endocrinology & Metabolism for publication November 1978.

Presentations:

None

STATUS:

Completed.

OB-GYN

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of "Pereyra-Harer" Procedure in Treating Urinary Stress Incontinence.

WORK UNIT NO.: 67/351

PRINCIPAL INVESTIGATOR: Keith F. Deubler, COL, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To evaluate the Pereyra method of urethro-vesical suspension as a means of treatment for patients with true urinary stress incontinence.

TECHNICAL APPROACH

This project is an attempt to define the long-term effect of one type of surgical repair for urinary stress incontinence in the female. Patients with urinary stress incontinence receive a complete urological work-up. The Bonney-Marchetti-Read "Stress test" is used to select surgical candidates. The chain cystogram is utilized as described by Green to define cases as Type I or Kennedy urethro-vesical plications as the primary surgical procedure used for control of Krantz procedure or a Pereyra-Harer procedure, depending on whether an abdominal or vaginal approach is indicated by the patient's other symptoms and findings. The long-term follow-up is done through the modality of patient questionnaire on a six-month basis. This will ultimately give sufficient data to define the relative merits of different surgical approaches in our treatment of this clinical problem.

Manpower (in professional man years): 0.3/yr

Funding (in thousands): FY 77 0
FY 78 0

WORK UNIT 67/351

PROGRESS

The project is continuing as outlined with accumulation of patients and follow-up information. There are currently over 200 patients in this study with approximately 90 of them being followed after a "Pereyra" procedure.

Publications: None

Presentations:

(1) Buffone, D.: Evaluation of the "Pereyra-Harer" Procedure in Treating Urinary Stress Incontinence. Presented: The Armed Forces District Meeting of the American College of OB-GYN, Las Vegas, Nevada, October 1970.

(2) Woods, W.M.: Evaluation of the "Pereyra-Harer" Procedure in the Treatment of Urinary Stress Incontinence. Accepted for Presentation. Armed Forces District Meeting of the American College of OB-GYN, Washington, D.C., November 1975.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Gynecologic Follow-up after Tubal Surgery for Sterilization.

WORK UNIT NO.: 73/353

PRINCIPAL INVESTIGATOR: Keith F. Deubler, COL, MC

ASSOCIATE INVESTIGATOR: Durell A. Hiller, CPT, MC

OBJECTIVES

1. To determine the incidence of GYN problems following tubal surgery for sterilization in a five-year postoperative follow-up.

2. To determine the failure rate of various types of tubal surgery for sterilization.

3. To determine complications (operative) of various types of tubal surgery for sterilization.

4. To determine morbidity (postoperative) from various types of tubal surgery for sterilization.

5. To determine patient's estimates of the value of the procedure.

TECHNICAL APPROACH

The long-term results of sterilization by tubal surgery as opposed to other means of sterilization will be evaluated by registering all these patients in the tumor registry and following their progress for several years by a questionnaire on a biannual basis.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0
FY 78: 0

WORK UNIT 73/353

PROGRESS

Data collection only, at present. Material collected has not been reviewed as yet. The three-year collection of cases is to be followed for five years and is to be maintained on these patients by questionnaire. The progress is initially the same as last year's.

Publications: None

Presentations:

(1) Hiller, D.A., Elliott, J.P.: Tubal Ligation Syndrome Myth or Reality. Presented: Armed Forces Division of ACOG, New Orleans, Louisiana, October 1977.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME

30 SEP 78

TITLE: A Comparison of Serum Estriol Levels and Human Placenta Lactogen (HPL) Levels in the Management of Hypertensive and Vascular Disease in Pregnancy.

WORK UNIT NO.: 75/352

PRINCIPAL INVESTIGATOR: Keith F. Deubler, COL, MC

ASSOCIATE INVESTIGATOR: Thomas P. O'Barr, Ph.D., DAC

OBJECTIVES

The object of this study is to determine if HPL level obtained after the 30th week of gestation will be as effective in managing the outcome for mother and fetus as serum estriols which are currently being utilized at Fitzsimons Army Medical Center.

TECHNICAL APPROACH

During the 12 months from initiation of this study, all patients seen in the clinic or hospitalized with the diagnosis of hypertension in pregnancy, preeclampsia, glomerulonephritis, systemic lupus erythematosus, or other vascular diseases will be studied. Each patient will be studied from onset of clinical findings or 30 weeks' gestation until delivery.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 77: 2.5
FY 78: 2.5

PROGRESS

Preliminary evaluation of approximately 50 patients has been done. Results indicate the study should be continued to accumulate more data. The progress is initially the same as last year's.

Publications: None

WORK UNIT NO.: 75/352

Presentations:

(1) **Edward J. Lazarus, MAJ, MC, is presenting the preliminary results at the Annual Armed Forces Seminar and 16th Annual District Meeting, American College of Obstetrics and Gynecology, October 1977.**

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of Ibuprofen (Motrin) in Dysmenorrhea.

WORK UNIT NO.: 76/350

PRINCIPAL INVESTIGATOR: William L. Black, MAJ, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To compare the relief of dysmenorrhea pain by Ibuprofen.

TECHNICAL APPROACH

Patients have been taken into the study and evaluated on either aspirin, placebo, or motrin for three consecutive cycles on each drug. The patients are filling our report cards with each cycle as to the amount of relief they have obtained and the amount of medication taken. These are returned after each set of three cycles and new drugs are obtained through the pharmacy.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Since the onset of the study, there have been 15 women enrolled in the study out of the required 48 women. We have been able to have completion of the first cycle on medication for three women. Results are being held for tabulation at the end. The doctors in OB-GYN Clinic will refer any patients with continuous dysmenorrhea to the Principal Investigator in an attempt to get them on the protocol for the evaluation of this medication. The progress is initially the same as last year's.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of the Role of Unrecognized Intrauterine Infection in Premature Labor and Premature Rupture of Membranes.

WORK UNIT NO.: 77/350

PRINCIPAL INVESTIGATORS: J.R. Bobitt, LTC, MC
G.L. Brown, LTC, PhD, MSC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To determine the presence, number and frequency of bacteria and mycoplasmatales in the amniotic fluid of patients presenting with premature labor and/or premature rupture of membranes.

TECHNICAL APPROACH

This study is a coordinated investigation between Department of Obstetrics and Gynecology and Clinical Investigation Service, Fitzsimons Army Medical Center. All administrative and professional care, including specimen collection and distribution to the Clinical Investigation Service, will be the responsibility of OB-GYN. The management and methodology for microbiological evaluation of specimens will be the responsibility of CIS, Microbiology Section.

Manpower (in professional man years): 0.0

Funding (in thousands) FY 78: 0.0

PROGRESS

All preliminary work to initiate the current study has been completed. No patients have been studied at this time. Two additional investigators are participating in the study, MAJ Damato of the Clinical Investigation Service and CPT Byars of the Department of OB-GYN.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Uterine Vein and Ovarian Vein Prostaglandin F_2 Levels in Normal Women and Women with Pelvic Pain.

WORK UNIT NO.: 77/351

PRINCIPAL INVESTIGATORS: Durell A. Hiller III, CPT, MC
John P. Elliott, MAJ, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

The objective of this study was to attempt to discover the etiology of previously unexplained pelvic pain, i.e., where no clinical or pathological diagnosis can be made to explain the pain. Special attention will be paid to the "Post-Tubal-Ligation Syndrome."

TECHNICAL APPROACH

Patients undergoing abdominal laparotomy at various times in the menstral cycle will have two blood samples drawn by direct vein puncture of uterine vein and infundibulopelvic vein. These samples will be analyzed for PGF_2 content by radio-immunoassay technique. Patients with pelvic pain will be selected at the time of laparotomy for identical blood sampling for PGF_2. The data will be analyzed to determine if PGF_2 is elevated in blood samples taken from patients with pelvic pain.

Manpower (in professional man years): 0

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Work has been started on this study but has not been completed since both investigators have departed this station.

Publications and Presentations: None

STATUS:

Terminated.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Inhibition of Premature Labor with Terbutaline.

WORK UNIT NO.: 78/350

PRINCIPAL INVESTIGATORS: D.D. Riston, CPT, MC
J.R. Bobitt, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To study inhibitory effects of Terbutaline on premature labor.

TECHNICAL APPROACH

Patients at less than 36 weeks of gestation, with no contra-indicating condition such as ruptured BOW, intrauterine sepsis, or abruptio placentis, will be treated for premature labor with either Terbutaline or a placebo. The presence of labor and absence of fetal distress will be confirmed by electronic monitor. Entrance to the study will be approved by a member of the attending staff prior to obtaining permission from the patient.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 78: 0.0

PROGRESS

The number of patients studied thus far are 25, approximately 50% on alcohol and approximately 50% on Terbutaline. The study has progressed well, but it is currently too early to give any statistical information about the project. Some early conclusions include: 1. Multiparous patients are more susceptible to premature labor than primiparous. 2. Intravenous and subcutaneous Terbutaline is more efficacious than oral Terbutaline. Problems: We have collected data for side effects, but this has been worked out.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: An Evaluation of the Effect of Suction Drainage on Infectious Morbidity in Patients Undergoing Cesarean Section.

WORK UNIT O.: 78/351

PRINCIPAL INVESTIGATOR: J.R. Bobitt, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To determine if the incidence and severity of pelvic infections in patients undergoing cesarean section is significantly decreased through the use of retroperitoneal suction drainage of the uterine operative site.

TECHNICAL APPROACH

We plan to compare the frequency and severity of pelvic infections among 50 patients undergoing cesarean section with suction drainage of the operative site, with a similar group of 50 patients without drainage. Patients considered infected at the time of cesarean section will not be included in the study. Patients on antibiotic medications will also be excluded. Any patient who will have had two hours of labor at the time of cesarean section or has ruptured membranes at the time of cesarean section is a candidate for the study. The study group will be drained by a hemovac suction apparatus whereas this technique will not be available to those patients in the control group. The suction catheter will be placed beneath the vesico-uterine fold and brought out through the lower abdomen remaining extraperitoneal. Study and control patients will be selected by a table of random numbers prepared prior to the study.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 78: 0.0

PROGRESS

To date 52 patients have been entered into the study. Twenty-four patients have been randomly placed in the group receiving a retroperitoneal hemovac drain at the time of cesarean section and 28

WORK UNIT NO.: 78/351

PROGRESS - continued

patients have been rendomized into the control group receiving no drainage. At this point in the study no conclusions can be drawn as to whether postop drainage decreases febrile morbidity following cesarean section. No complications have arisen as the result of drainage. The patients' records are currently being studied for information as to the amount of drainage obtained and to the cultural findings done on the drainage fluid.

Publications and Presentations: None

STATUS:

Ongoing.

PEDIATRICS

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Effect of Prophylactic Antibiotic Therapy on Gravid Group B Beta Hemolytic Streptococcus Carriers.

WORK UNIT NO.: 75/401

PRINCIPAL INVESTIGATORS: Gerald B. Merenstein, LTC, MC
George L. Brown, LTC, MSC, Ph.D.

ASSOCIATE INVESTIGATOR: Ann H. Tull, B.S., DAC

OBJECTIVES

To evaluate several selective culture media for the isolation of Group B Beta Hemolytic Streptococcus (GBHS) and the use of prophylactic antibiotic therapy in antepartum GBHS carriers with regard to colonization of the infant.

TECHNICAL APPROACH

Endocervical cultures are obtained from all obstetrical patients at FAMC at the initial obstetrical visits and at delivery. Those positive are re-evaluated for GBHS at the 30th and 38th week visits. In addition, "positives" are placed in a control or a treatment group; those in the treatment group are placed on oral penicillin or erythromycin, if allergic. Ear, umbilical and cord cultures are obtained from each infant for GBHS evaluation. Numerous media incorporating inhibitory substances are evaluated for GBHS isolation. Isolated GBHS are studied for type specific antigen composition.

Manpower (in professional man years): 1.5/yr

Funding (in thousands) FY 77: 4.0
FY 78: 4.0

PROGRESS

During the past year, a review has been conducted to identify any streptococcal sudden unexpected death patients from the immediate peripartum period. Four such patients have been evaluated and the importance of this is being further investigated. The actual study has been temporarily halted while reevaluation of technique of evaluating mothers prior to term is being studied by members of the Department of Obstetrics and Gynecology.

WORK UNIT NO. 75/401

Publications:

(1) Yost, C.C., Calcagno, J.V., Merenstein, G.B., Todd, W.A., Dashow, E.E., Brown, G.L., Tull, A.H., and Kile, D.E.: Group B Beta Hemolytic Streptococcus: Improved Culture Detection and a Controlled Treatment Trial. Clinical Research, 24:186A, 1976.

(2) Luzier, T.L., Merenstein, G.B., Todd, W.A., Yost, C.C. and Brown, G.L.: The Treatment of Gravid Females at Term Colonized with Group B Streptococcus: A Randomized Controlled Study. Clinical Research 26:200A, 1978.

Presentations:

(1) Calcagno, J.V., Brown, G.L., Tull, A.H., Yost, C.C., Jolly, D.J., and Cromwell, R.K.: Evaluation of Three Collection - Transport Systems for the Isolation of Group B Streptococcus from Pre-Partum Women and Neonates: American Society for Microbiology, Atlantic City, New Jersey, 1976.

(2) Luzier, T.L.: The Treatment of Gravid Females at Term Colonized with Group B Beta Hemolytic Streptococcus: A Randomized Study. Accepted for presentation Military Section, American Academy of Pediatrics, November 1977.

(3) Luzier, T.L.: The Treatment of Gravid Females at Term Colonized with Group B Beta Hemolytic Streptococcus: A Randomized Study. Second prize Hugh Mahon Award, Fitzsimons Army Medical Center, Denver, Colorado, June 1977.

(4) Luzier, T.L.: The Treatment of Gravid Females Colonized with Group B Beta Hemolytic Streptococcus: A Randomized Controlled Study. Military Section, American Academy of Pediatrics, New York City, November 1977.

(5) Luzier, T.L.: The Treatment of Gravid Females at Term Colonized with Group B Streptococcus. Western Society for Pediatric Research, Carmel, California, 2 February 1978.

(6) Pierce, J.: Streptococcal Sudden Unexpected Death Syndrome. Aspen, Colorado, July 1978. Aspen Confernece on Perinatal Research.

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Early Digitalization in Premature Infants with Idiopathic Respiratory Distress (IRDS) Who Have Echocardiographic Evidence of Left Atrial Enlargement.

WORK UNIT NO.: 75/402

PRINCIPAL INVESTIGATOR: Gerald L. Way, MAJ, MC

ASSOCIATE INVESTIGATORS: Gerald B. Merenstein, LTC, MC
John R. Pierce, MAJ, MC

OBJECTIVES

To determine the usefulness of early digitalization in altering the progression of congestive heart failure and left-to-right shunting through the PDA in premature infants with IRDS.

TECHNICAL APPROACH

Infants with RDS and left atrial aortic diameter ratio of greater than 1.0 by echocardiograph will be included in the two study groups. The two study groups will be Group A-infants who will be digitalized with 40 mcg/kg dose of digoxin and maintained at 10 mcg/kg/day. Group B-infants who will not receive digoxin unless they clinically demonstrate overt congestive heart failure. Echocardiograms will be repeated every other day throughout the respirator course, and subsequently only if abnormal findings remain. Additional echocardiograms will be obtained if the clinical situation deteriorates. Echocardiograms will be evaluated with coinciding arterial blood gases, chest x-rays, EKG's, and laboratory data which will be done as needed for clinical management.

Manpower (in professional man years): .25/yr

Funding (in thousands) FY 77: 2.0
FY 78: 1.0

PROGRESS

Following a complete change-over in personnel at the neonatal fellow level, there was a time lapse in re-initiating this study. In January

WORK UNIT NO.: 75/402

PROGRESS - continued

1978, new patients were again admitted to this study and to date 17 have been added (9 in Group A and 8 in Group B).

Only partial success has been realized in retrieving the misplaced data on the approximately 16 patients initially admitted to the study. Recent conversation with Dr. Steven M. Golden now at the National Naval Medical Center in Bethesda, Maryland has renewed hope that more of this data can be found. Efforts continue to locate this data.

Our goal is to have 30 patients in each treatment group. This should be realized within the next 6-8 months.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of High Intensity Fiberoptic Transillumination in Infants.

WORK UNIT NO.: 76/400

PRINCIPAL INVESTIGATOR:

ASSOCIATE INVESTIGATORS: Gerard Breitzer, CPT, MC
Gerald B. Merenstein, LTC, MC

OBJECTIVES

To establish a new set of normal values of transillumination distances of infants' skulls using a 5,000 foot-candle fiberoptic light; to determine the efficacy of high intensity light in diagnosing pneumothoraces.

TECHNICAL APPROACH

All children in the normal newborn nursery and pediatric outpatient clinic and well child clinics for routine visits will have their skulls transilluminated using 3,000, 4,000, and 5,000 foot-candles of light from a fiberoptic source. Areas transilluminated will be the anterior fontanelle, posterior fontanelle, left parietal bone above the pinna midway on a line from the external air canal to the left eye on the frontal bone. Measurements of transillumination will be made from the center of the beam as outlined by Cheldelin et al. and will be compared with previous study results. Infants in the nursery with respiratory distress will be examined using the fiberoptic light as discussed by Kuhns, et al. to see if a pneumothorax or pneumomediastinum can be diagnosed by transillumination.

Manpower (in professional man years): 0.2/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Since the departure of the Principal Investigator on completion of his fellowship, no patients have been admitted to the study. The added investigator did not pursue the study.

WORK UNIT NO.: 76/400

PROGRESS - continued

An additional associate investigator is being sought to continue the project.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Purulent Nasopharyngitis: Double Blind Treatment Protocol.

WORK UNIT NO.: 77/401

PRINCIPAL INVESTIGATORS: Warren A. Todd, LTC, MC
James K. Todd, M.D.
James J. Damato, MAJ, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To determine what is the most effective treatment of children with purulent rhinitis and if the effective therapy is free of side effects. In addition data will be collected to determine the etiologic agent of purulent rhinitis.

TECHNICAL APPROACH

Children between the ages of 6 months and 6 years seen in the General Pediatric Clinic with a diagnosis of purulent rhinitis and with no other treatable disease receive a nasal culture and or placed on the protocol regimen. This regimen consists of four different packages: One containing Placebo-Actifed, one containing Placebo-Keflex, one containing Actifed-Keflex, one containing Placebo-Placebo. The child is seen for followup four days later where a repeat culture is done, physical examination is done, and a record is obtained from the mother as to whether or not there was improvement in the nasal discharge.

Manpower (in professional man years): 1.0/yr

Funding (in thousands) FY 78: .5

PROGRESS

Since the project was gegun in May of 1978, approximately 120 patients have been seen. Of this 120 patients, only 8 have failed to complete the study. At present the double blinding has not been broken so we do not have information as to the success or failure of various treatment regimens.

WORK UNIT NO.: 77/401

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of Ventricular Function and Pulmonary Vascular Resistance in Asphyxiated Infants.

WORK UNIT NO.: 77/402

PRINCIPAL INVESTIGATORS: Gerald L. Way, MAJ, MC
John R. Pierce, MAJ, MC
Gerald B. Merenstein, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To serially measure left ventricular (LV) function in asphyxiated infants. To determine if all asphyxiated infants have decreased ventricular function or only those who have severe symptomatology of congestive failure. To evaluate the course of the decreased ventricular function. To serially estimate pulmonary pressures, and to define the change in pulmonary vascular resistance in asphyxiated infants.

TECHNICAL APPROACH

All infants with the diagnosis of asphyxia neonatorum are to be entered into the study. Ventricular function and pulmonary vascular resistance will be evaluated.

Manpower (in professional man years): 1.0/yr

Funding (in thousands): FY 78: 0

PROGRESS

Because of lack of personnel, no babies have been entered into this study. It is also noted that there have been few babies with the diagnosis of asphyxia neonatorum who have come to FAMC. It is likely that this study will take a low priority on the investigators' research priority list.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Determination of Pulmonary Vascular Resistance in Newborn Infants at 5,280 feet using Right-Sided Systolic Time Intervals.

WORK UNIT NO.: 77/403

PRINCIPAL INVESTIGATORS: Gerald L. Way, MAJ, MC
John R. Pierce, MAJ, MC
Gerald B. Merenstein, LTC, MC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

We hope to determine the normal range of pulmonary vascular resistance in babies and the decline of increased pulmonary vascular resistance at this altitude and then compare it to the other altitudes mentioned.

TECHNICAL APPROACH

The babies are evaluated within 12 hr of delivery with complete echocardiograms being done. Repeat echo is done daily until discharge. If the echocardiograms are abnormal on discharge, the babies are reappointed to come back to Cardiology Clinic for repeat echocardiograms and evaluations.

Manpower (in professional man years): 1.0/yr

Funding (in thousands) FY 78: 0

PROGRESS

Six babies have been entered into the study so far. It was originally planned to have 100 babies in our study here in Denver; however, it is now felt that 50 babies will be sufficient. No infants have been entered into the study from either Leadville or sea level at this time.

Because of a lack of manpower to do the echocardiograms and to do the measurements, we have not had as many babies in the study as yet as we had hoped. It is likely, because of the current shortage of help, that the study will progress, however, probably quite slowly.

WORK UNIT NO.: 77/403

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Perceptions of Discipline: A Comparison of Mothers of School Age Children with Asthma and Children without Asthma.

WORK UNIT NO.: 78/400

PRINCIPAL INVESTIGATORS: Linda Kerscher, CPT, ANC (M/RET)
PNP, Student MS in Nursing (UCMC)
Jean Robidoux, CPT, ANC (M/RET)
PNP, Student MS in Nursing (UCMC)

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

The purpose of this study is to find out whether mothers of school age children with chronic asthma are more permissive in their approach to discipline as compared to mothers of school age children without asthma or any chronic illness.

TECHNICAL APPROACH

Fifteen mothers of children with chronic asthma who require daily doses of a bronchodilator will be selected randomly and interviewed using a tool on discipline techniques developed at the National Institute of Mental Health. They will return for follow-up care at the Allergy Clinic of Fitzsimons Army Medical Center. The asthmatic children will then be matched with children without any chronic diseases by age, sex, and race. Mothers of the non-asthmatic children will be interviewed at the Pediatric Clinic at Fitzsimons. With this interview tool it is possible to obtain summed standardized scores for overall restrictiveness severity of punishment, the child's compliance and dependent behaviors by summing the ratings of these behaviors in specific situations. Each interview which is recorded on tape, will be independently coded by two raters to give a measure of reliability to the resulting scores. The means of the summed standardized scores will be compared between the asthmatic and non-asthmatic groups. A T-test will be used to determine the significance of the difference between the means.

Manpower (in professional man years): 0.25/yr

Funding (in thousands) FY 78: 0

WORK UNIT NO.: 78/400

PROGRESS

Since inception of this study, twenty-three mothers have been interviewed. All interviews will be obtained before any analysis of data is attempted.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Dysmenorrhea -- Correlation Between Physiologic and Psychologic Factors.

WORK UNIT NO.: 78/401

PRINCIPAL INVESTIGATOR: Christine L. Lawlor, CHA, PA-C

ASSOCIATE INVESTIGATOR: Ann Marie Davis, CHA, PA

OBJECTIVES

This study attempted to show that no significant correlation exists in adolescent girls between personality type and presence or absence of primary dysmenorrhea or severity of symptoms of dysmenorrhea.

TECHNICAL APPROACH

Data was obtained from 120 volunteer females age 12-20. This data included a medical/menstrual history, California Personality Inventory, and pelvic examination (performed only on the subjects who gave a history of dysmenorrhea). The data was statistically analyzed to investigate correlations between presence or absence of dysmenorrhea and severity of dysmenorrhea and personality variable as measured by the California Personality Inventory.

Manpower (in professional man years): 0.5/yr

Funding (in thousands) FY 78: 0.0

PROGRESS

Data from 120 volunteers was obtained and analyzed. Appropriate conclusions, observations and recommendations were made. An article is being prepared for publication.

Publications: None

Presentations: Lawlor, C.L., and A.M. Davis: Dysmenorrhea in Adolescents. University of Colorado School of Medicine, Denver, CO. June, 1978.

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Influence of Body Positioning on Gastric Residuals in Premature Infants.

WORK UNIT NO.: 78/402

PRINCIPAL INVESTIGATOR: Barbara S. Turner, CPT, ANC, RN, MS

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To compare the amount of gastric residuals in the premature infant's stomach three hours after feeding in relation to the body position of the infant.

TECHNICAL APPROACH

Premature infants requiring gavage feedings who were less than 35 weeks gestation were examined. Infants meeting outlined criteria were fed the same formula, at the same time and in the same manner as previously used. Gastric residuals were measured and recorded with body position. Positions used are right side, left side and stomach.

Manpower (in professional man years): 0

Funding (in thousands) FY 78: 0

PROGRESS

Data collection began in July 1978. To date, four subjects have been studied. Data have been recorded on gastric residuals, body positions as well as the extraneous variables of gestational age, sex, race and type of formula. Data analysis will begin when target subject population of 20 has been studied.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Influence of Body Positioning on Gastric Residuals in Premature Infants Requiring Ventilatory Assistance.

WORK UNIT NO.: 78/403

PRINCIPAL INVESTIGATOR: Barbara S. Turner, CPT, ANC, RN, MS

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To compare the amount of gastric residual in the premature infant's stomach three hours after feeding in relation to the body position of the infant.

TECHNICAL APPROACH

Premature infants requiring ventilatory assistance and gavage feedings who were less than 35 weeks gestation were examined. Infants meeting outlined criteria were fed the same formula, at the same time, and in the same manner as previously used. Gastric residuals were measured and recorded with body position. Positions used are left side, right side and back.

Manpower (in professional man years): 0

Funding (in thousands) FY 78: 0

PROGRESS

Data collection began in July 1978. To date, three subjects have been studied. Data have been recorded on gastric residuals, body positions as well as the extraneous variables of gestational age, sex, race, and type of formula. Data analysis will begin when target subject population of 20 has been studied.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Assessment of the Relationship of Serum Amino Acid Levels to Episodes of Apparent Sepsis.

WORK UNIT NO.: 78/404

PRINCIPAL INVESTIGATORS: John R. Pierce, MAJ, MC
Richard Eckert, LTC, MC
Thomas P. O'Barr, DAC, PhD

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To determine the relationship between possible abnormal serum amino acid levels and clinical episodes of apparent sepsis in premature infants.

TECHNICAL APPROACH

Blood samples will be taken from each premature infant (26-36 weeks gestation) who is suspected of having sepsis. These samples will be examined by thin-layer chromatography for the amino acids, tyrosine, phenylalanine, cystine and methionine. A relationship between elevated levels of these amino acids and episodes of clinical sepsis (signs consistent with sepsis but negative cultures) is being sought.

Manpower (in professional man years): 0

Funding (in thousands) FY 78: 0

PROGRESS

The first patient has not yet been admitted to the study; however, the clinical investigation lab is set up and should be receiving the first samples within the next couple of weeks.

Publications and Presentations: None

STATUS:

Ongoing.

PATHOLOGY

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Comparison of Plasma and Whole Blood Methods of Assaying Heparin Levels in Patients Undergoing Extracorporeal Circulation.

WORK UNIT NO.: 77/450

PRINCIPAL INVESTIGATORS: Judy A. Barber, M.T. (ASCP)
Douglas D. Pritchard, MAJ, MC

ASSOCIATE INVESTIGATORS: Donald G. Corby, COL, MC
John Connelly
Patricia Rush, M.T. (ASCP)
William Hamaker, COL, MC

OBJECTIVES

To compare the reliability of a simple, rapid, whole blood assay technique for heparin levels with a plasma method presently in use. There is a special interest in the comparative values obtained on thrombocytopenic patients and patients with low prothrombin complex factors due to the recent discontinuance of oral anticoagulants.

TECHNICAL APPROACH

Sixty-seven patients undergoing open heart surgery were studied while on cardiopulmonary bypass. Analysis of the samples for both plasma and wholeblood heparin levels was carried out.

Manpower (in professional man years): 0.5/yr

Funding (in thousands) FY 78: 1.0

PROGRESS

The patient studies have been completed and the analysis of the data is in progress. The values obtained by both methods are being statistically analyzed. A paper is being prepared to be submitted to Anesthesiology.

Publications and Presentations: None

STATUS:

Completed.

RADIOLOGY

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Bone Marrow Scintigraphy and Scintigraphic Localization of Soft Tissue Tumors by Use of Indium-111 Chloride

WORK UNIT NO.: 74/600

PRINCIPAL INVESTIGATOR: Robert J. Telepak, MAJ, MC

ASSOCIATE INVESTIGATOR: Nasser Ghaed, LTC, MC

OBJECTIVES

Clinical evaluation of Indium-111 Chloride supplied by Medi-Physics, Inc. The evaluation of the agent is significant in that it represents a method of studying sites of erythropoiesis in bone marrow and allows scintigraphic localization of soft tissue tumors by non-invasive techniques. In selected patients, this affords clinical information which could not be obtained by other methods.

TECHNICAL APPROACH

Up to 2mc of Indium-111 Chloride or proportionally less depending on body weight supplied by Medi-Physics, Inc. will be administered intravenously to patients referred to Nuclear Medicine Laboratory for either scintigraphic evaluation of sites of erythropoiesis in bone marrow or the presence of soft tissue tumors. After administration routine scintigraphic procedures with conventional equipment for periods up to 96 hours depending on the patient's clinical situation will be peformed. The number of subjects with known or suspected hematologic disease will be unlimited and there will be no limitation on sex or the age of patients. Radionuclide will not be administered to pregnant patients or patients under the age of 18 unless the clinical situation is severely dependent upon this study. Data obtained will be recorded in the routine fashion used to record radionuclide studies. This consists of a consultation sheet from the referring physician which will be appropriately answered. Selective scans will be copied on polaroid film included with the record and returned to the patient's chart. The quality of the scintigraphic images of the bone marrow and tumor site will be evaluated so the best image is obtained. Adverse reactions will be reported immediately to Medi-Physics, Inc. and to appropriate state license and agencies where

WORK UNIT NO.: 74/600

TECHNICAL APPROACH - continued

applicable. Clinical evaluation of these agents as described above is considered adequate since the use of Indium-111 Chloride is a substitute for iron and is well established in the literature.

Manpower (in professional man years): 0.05/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

There has been one Indium-111 Chloride study done in the last year since 30 September 1977. It is anticipated that some of these scans will be done in the coming year.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Use of Gallium 67 Citrate in Evaluation of Patients with Known or Suspected Tumors and Pyogenic Abscesses.

WORK UNIT NO.: 74/601

PRINCIPAL INVESTIGATOR: Robert J. Telepak, MAJ, MC

ASSOCIATE INVESTIGATOR: Nasser Ghaed, LTC, MC

OBJECTIVES

Clinical evaluation of Gallium 67 Citrate supplied by Medi-Physics, Inc.

TECHNICAL APPROACH

The evaluation of this agent is significant in that it represents a method of diagnosing tumors that cannot be visualized by other conventional means, resulting in significantly more information on each patient with initial diagnosis, initial therapy and follow-up care. It will be used to localize pyogenic abscesses primarily subdiaphragmatic abscesses which cannot be localized by conventional methods. Use of this agent will enhance the diagnosis of this serious medical condition and ultimate treatment of the patient.

Manpower (in professional man years): 0.5/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Sixty-nine patients were studied using Gallium 67 Citrate for evaluation of known or suspected tumors or pyogenic abscesses. The radiopharmaceutical proved adequate for the intended diagnostic purpose and again no detectable side effects were observed.

Publications and Presentations: None

STATUS:

Completed.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Use of Indium 111 DTPA for the Study of Cerebrospinal Fluid Pathways.

WORK UNIT NO.: 74/602

PRINCIPAL INVESTIGATOR: Robert J. Telepak, MAJ, MC

ASSOCIATE INVESTIGATOR: Nasser Ghaed, LTC, MC

OBJECTIVES

Clinical evaluation of Indium 111 DTPA in aqueous ionic solution (pH 7 to 8) for study of cerebrospinal fluid pathways as supplied by Medi-Physics, Inc.

TECHNICAL APPROACH

Evaluation of this agent represents a method of studying cerebrospinal fluid pathways in selected patients with a compound that will result in significantly less absorbed radiation doses to patients than the methods currently used. The incidence of side reactions, such as fever, headaches and mild meningitis, will probably be decreased in comparison to the compound presently used.

Manpower (in professional man hours): 0.1/yr

Funding (in thousands) FY 77: 0
FY 78: 0

PROGRESS

Seven studies using Indium 111 DTPA for evaluation of patients with cerebral spinal fluid pathways pathology have been done in the last year since 30 September 1977. The radiopharmaceutical proved adequate for the intended diagnostic purpose, and again no detectable side effects were observed.

Publications and Presentations: None

STATUS:

Ongoing.

HOSPITAL CLINICS

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Establishment of and Training in Methods for Special Studies of Abnormal Hemoglobins.

WORK UNIT NO.: 74/651

PRINCIPAL INVESTIGATOR: Nicholas C. Bethlenfalvay, COL, MC

ASSOCIATE INVESTIGATOR: George L. Brown, LTC, MSC

OBJECTIVES

To establish and conduct training in methods for special studies of abnormal hemoglobins.

TECHNICAL APPROACH

Plans are to familiarize existing personnel in the performance of procedures involving biochemical study of hemoproteins using existing equipment.

Clinical studies of mutant human and animal hemoglobins have defined the effects of molecular aberrations on physiologic processes. Amino acid substitutions or deletions in the alpha, beta, gamma and delta chains dictate a variety of structural alterations which may modify hemoglobin affinity for oxygen, or affect the stability of the hemoglobin molecule. A laboratory to aid the clinician or researcher in his investigation of a mutant hemoglobin is not available in the Denver Metropolitan area. A thorough preliminary special investigation of hemoglobins almost always kindles the interest and support of established investigators in CONUS or abroad, where amino acid analyses in the end ultimately reveal the molecular lesion.

Manpower (in professional man years): 0.2/yr

Funding (in thousands) FY 77: 2.5
FY 78: 2.5

WORK UNIT 74/651

PROGRESS

The following procedures can now be performed: Preparation and preservation and storage of hemoglobin and globin. Zone electrophoresis of hemoglobin in various media and electrophoresis in polyacrylamide gel with isoelectric focusing. Quantitation of Hb F. Quantitation of Hb A_2 by microcromatography. Hb stability testing by the isopropanol technique. Electrophoresis of urea dissociated globin, and qualitative and quantitative recovery of hemoglobin and its subunits using column chromatography. Hybridization procedures to delineate alpha vs. beta chain variant hemoglobins. Separation of hemoglobins into alpha and beta chains by reaction with PMB or PCMB. In vitro globin synthesis studies using ^{14}C leucine to establish alpha beta globin chain ratios. The derivatization of high oxygen affinity hemoglobin which is electrophorectially silent.

Since 30 September 1977 the following new methodology was acquired: Enzymatic digestion of globin polpeptide chains is followed by high voltage electrophoresis and descending chromatography resulting in separation of the individual tryptic peptide which are subsequently stained to establish the structural localization of specific amino acid substitution.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation of Thalassemia as Cause of Hypochromic Microcytic Anemia or in Interaction with Hemoglobin Variants.

WORK UNIT NO.: 78/650

PRINCIPAL INVESTIGATORS: Nicholas C. Bethlenfalvay, COL, MC
Donald G. Corby, COL, MC
George L. Brown, LTC, MSC, PhD
John C. Michalak, MAJ, MC
Philip O'Barr, DAC, PhD

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To demonstrate that thalassemia may be one of the causes of hypochromic-microcytic anemia and a factor that modified the amount of hemoglobin variants with which it interacts.

TECHNICAL APPROACH

Patients with (a) hypochromic-microcytic anemia the cause of which could not be determined by routine clinical laboratory methods and (b) patients whose hemoglobin electrophoregram reveals a variant hemoglobin in amounts greater than 50 or less than 40% will be evaluated in this study by means of hemoglobin electrophoresis in diverse media and column chromatography. To determine the globin polypeptide chain synthetic ratios peripheral blood will be incubated with ^{14}C leucine. The red cell lysate will be transformed into globin and the individual polypeptide chains separated on CM cellulose columns. Alpha/beta ratios will be calculated as total radioactivity or specific activity ratios. Synthetic ratios of alpha to non-alpha chains deviating from unity indicate non-balanced chain synthesis and establish the diagnosis of thalassemia.

Manpower (in professional man years): 1.0/yr

Funding (in thousands) FY 78: 1.0

WORK UNIT NO.: 78/650

PROGRESS

In FY 78 in addition to several normal controls, fifteen patients have been found eligible to enter the study after routine screening. One of these has been studied and found to have beta thalassemia intermedia. Currently our efforts are directed toward synthetic studies on normal controls to establish normal values for this laboratory.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIOMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Evaluation and Structural Identification of Unusual Human Hemoglobin Variants.

WORK UNIT NO.: 78/651

PRINCIPAL INVESTIGATORS: Nicholas C. Bethlenfalvay, COL, MC
Donald G. Corby, COL, MC
George L. Brown, LTC, MSC, PhD
John C. Michalak, MAJ, MC
Philip O'Barr, DAC, PhD

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To demonstrate that variation at critical sites in hemoglobin structure is one of the reasons for anemia, polycythemia or a hemolytic state in man.

TECHNICAL APPROACH

Documented cases of chronic hemolytic anemia, erythrocytosis with a demonstrably left shifted oxygen dissociation curve, cases of anemia with a definite right shift of the hemoglobin oxygen dissociation curve, and cases who on routine screening are recognized to have hemoglobins C, D, E, G or J will be studied. Special electrophoretic techniques (cellulose, agar or polycrylamide media with IEF as applicable) and column chromatography will be employed. Localization of the structure of the modification(s) within the polypeptide chain will be made following enzymatic digestion of the affected polypeptide chain following electrophoretic and chromatographic separation and staining of the individual peptides.

Manpower (in professional man years): 1.0/yr

Funding (in thousands) FY 78: 2.0

WORK UNIT NO.: 78/651

PROGRESS

In FY 78 five (5) patients entered the study. Two of these were found to have common hemoglobin variants. The third patient is believed to have unstable hemoglobin disease with an electrophoretically and chromatographically silent variant (neutral substitution). Extensive structrual studies on this patient and her parents are currently being conducted in the laboratory of Dr. T.H.J. Huisman, Medical College of Georgia, Augusta, Georgia.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Alpha Thalassemia: Evaluation of the Significance of Hemoglobin Bart's in the Black Neonate.

WORK UNIT NO.: 78/652

PRINCIPAL INVESTIGATORS: Nicholas C. Bethlenfalvay, COL, MC
Gerald B. Merenstein, LTC, MC
George L. Brown, LTC, MSC, PhD
Thomas P. O'Barr, DAC, PhD

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To confirm the presence and assess the severity of alpha thalassemia in Black neonates who have Hemoglobin Bart's by means of *in vitro* globin polypeptide chain synthesis and calculation of alpha-beta readioactivity ratios.

TECHNICAL APPROACH

Black neonates will be screened by means of electrophoresis for the absence or presence of Hemoglobin Bart's. Quantitation of Hemoglobin Bart's will be done by column chromatography. Those cases who present with detectable amounts of Hemoglobin Bart's at birth will be again studied at one year of age for the presence or absence of "free" alpha chain pool by incubating their peripheral blood with ^{14}C leucine *in vitro* and separation of globin chains on CM cellulose columns. At that time alpha/beta chain synthetic ratios will be determined.

Manpower (in professional man years): 1.0/yr

Funding (in thousands) FY 78: 1.0

PROGRESS

Since the inception of this protocol in FY 78, twenty-five Black neonates were studied. Two of these had an excess of 2% Hemoglobin Bart's. Two had between 1 and 2% Hemoglobin Bart's. The remainder had no detectable Hemoglobin Bart's.

Publications and Presentations: None

STATUS:

Ongoing.

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Gamma Thalassemia in the Newborn.

WORK UNIT NO.: 78/653

PRINCIPAL INVESTIGATORS: Nicholas C. Bethlenfalvay, COL, MC
Gerald B. Merenstein, LTC, MC
George L. Brown, LTC, MSC, PhD
Thomas P. O'Barr, DAC, PhD

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To demonstrate that suppression of gamma polypeptide chain synthesis is one of the mechanisms that causes microcytic-hypochromic (hemolytic) anemia in the newborn.

TECHNICAL APPROACH

Reticulocyte enriched peripheral blood of newborn having microcytic-hypochromic anemia of unknown etiology will be incubated with ^{14}C leucine *in vitro*. Globin will be prepared by the acid acetone technique and fractionated into alpha, beta and gamma chains on CM cellulose columns. Radioactivity and specific activity ratios of gamma/alpha and gamma plus beta/alpha chains will be calculated.

Manpower (in professional man years): 1.0/yr

Funding (in thousands) FY 78: 0.8

PROGRESS

In FY 78 no newborn met the selection criteria to enter into the study.

Publications and Presentations: None

STATUS:

Onogoing.

NURSING

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: Assessment and Implications of the Public's Knowledge and Acceptance of the Pediatric Nurse Practitioner Role Within A Military Population.

WORK UNIT NO.: 77/700

PRINCIPAL INVESTIGATOR: Wayne A. Rose, CPT, ANC, PNP

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

To evaluate the level of the public's knowledge and acceptance of the Pediatric Nurse Practitioner role and to discuss the implications of the information gained by this assessment, as they relate to the knowledge and acceptance of the Pediatric Nurse Practitioner role.

TECHNICAL APPROACH

An anonymous assessment questionnaire was devised for distribution to parents as they obtained their child's health record for scheduled appointment. Upon completion, the respondent would deposit the questionnaire and consent form into marked receptacles placed within the clinic.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 78: 0.0

PROGRESS

The data was collected during the month of October 1977. A total of 950 questionnaires were distributed and 578 people responded. Inclosed is the first draft of the raw data and initial assessment of that data. The researcher is presently completing the second draft for publication.

Publications and Presentations: None

STATUS:

Completed.

PHYSICAL MEDICINE and REHABILITATION SERVICE

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: A Home Based Infant Stimulation Program.

WORK UNIT NO.: 77/750

PRINCIPAL INVESTIGATOR: Dorothy McKennett, MAJ, AMSC

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

The primary objective of this study is to utilize a home base infant stimulation program as an aid in the fulfillment of the infant's cognitive and sensorimotor potential.

TECHNICAL APPROACH

Twenty normal newborn infants (ten in the control and ten in the experimental group) from the nursery at FAMC were assessed on the third and on, or about, the 28th day of life using the Brazelton Neonatal Behavioral Assessment Scale. The experimental mothers were given a home program of developmental stimulation. The purpose was to see if this program could make a significant difference in the visual, auditory, motor and other developmental aspects in the first month of life.

Manpower (in professional man years): 0.1/yr

Funding (in thousands) FY 78: 0

PROGRESS

Between March 1978 and June 1978, twenty normal newborn infants were tested. This completed the formal testing. Currently, I am in the process of finalizing my research thesis.

Publications and Presentations: None

STATUS:

Completed.

SOCIAL WORK SERVICE

CLINICAL INVESTIGATION SERVICE
FITZSIMONS ARMY MEDICAL CENTER
Denver, Colorado 80240

RESEARCH PROJECT RESUME
30 SEP 78

TITLE: The Gravity of Child Care and Maltreatment Acts: An Assessment of Opinions of U.S. Army Child Protection and Case Management Team Members.

WORK UNIT NO.: 78/755

PRINCIPAL INVESTIGATOR: Theodore P. Furukawa, CPT(P), MSC, M.S.W.

ASSOCIATE INVESTIGATOR: None

OBJECTIVES

Through written questionnaire survey of selected U.S. Army Child Protection and Case Mangement Team (CPCMT) members assigned to continental United States (CONUS) medical treatment facilities, the study will: (1) clarify the types of acts toward children which are considered acceptable child care vs. maltreatment, (2) ascertain the way in which specific features of the child care incident affect the judgment of seriousness, and (3) consider the extent to which seriousness judgemnts are determined by characteristics of those making the assessments.

TECHNICAL APPROACH

Since 1976, all CONUS Army installations with 2,000 or more dependents are mandated to establish a multidisciplinary CPCMT to identify, protect, and treat the maltreated child and his/her family (AR 600-48). Two written questionnaires were developed for the study: (1) a survey of the installations' senior social workers for organizational data and (2) a survey of CPCMT members for personal/professional data and for their ratings on a standard set of vignettes (for seriousness and predicted level of intervention by their CPCMTs).

Manpower (in professional years): 0.25/yr (@ 1.0/yr)

Funding (in thousands) FY 78: 0

PROGRESS

Between July and September 1978, questionnaires were developed and sent to forty-two installation senior social workers and to 469 CPCMT members (dated 1 October 1978). A suspense date of 1 November 1978 was established for the return of all questionnaires.

Publications and Presentations: None

STATUS:

Ongoing.

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INVESTIGATORS INDEX

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