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14. ABSTRACT Approximately 25% of military personnel who served in the 1990-1991 Gulf War developed a syndrome of symptoms, now known as Gulf War Illness, characterized by chronic pain, fatigue, insomnia, gastrointestinal symptoms and altered nervous system function. Although the cause of Gulf War Illness remains uncertain, exposure to toxic chemicals from nerve gases, air pollution from oil fires and other sources remains one of the most likely explanations. This study was designed to determine whether a program of daily exercise and sauna therapy with administration of a variety of supplements including increasing concentrations of crystalline niacin for a period of three to six weeks would result in an improved quality of life and better cognitive function. The basic hypothesis behind this intervention is that toxic chemicals remain stored in the body of Gulf War veterans, and that this intervention might facilitate their release from the body and improve health. A total of 31 Gulf War Illness veterans completed the detoxification program. All subjects provided blood samples for clinical chemistry determinations, filled out quality of life forms and took a series of cognitive function tests before and seven days after the sauna therapy. Twenty three of the 31 veterans completed a three-month follow-up series of tests. Some veterans were in a control group that took all tests, then waited one month before repeating the tests and then entered the above program. No serious adverse events were encountered. Data analysis is not yet complete, but the great majority of participants reported improved health upon completion of the program. The critical question is whether this improvement lasts and whether the self-reported findings are reflected in the performance on the various tests and in the clinical chemistry profiles. The answer to these questions awaits completion of the data analysis.					
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FINAL REPORT: GW0930766: GULF WAR ILLNESS – EVALUATION OF AN INNOVATIVE DETOXIFICATION PROGRAM

DATE: 22 DECEMBER 2015

Abstract:

Approximately 25% of military personnel who served in the 1990-1991 Gulf War developed a syndrome of symptoms, now known as Gulf War Illness, characterized by chronic pain, fatigue, insomnia, gastrointestinal symptoms and altered nervous system function. Although the cause of Gulf War Illness remains uncertain, exposure to toxic chemicals from nerve gases, air pollution from oil fires and other sources remains as one of the most likely explanations. This study was designed to determine whether a program of daily exercise and sauna therapy with administration of a variety of supplements including increasing doses of crystalline niacin for a period of three to six weeks would result in an improved quality of life and better cognitive function. The basic hypothesis behind this intervention is that toxic chemicals remain stored in the body of Gulf War veterans, and that this intervention might facilitate their release from the body and improve health.

A total of 31 Gulf War Illness veterans completed the detoxification program. All subjects provided blood samples for clinical chemistry determinations and filled out quality of life forms and took a series of cognitive function tests before and seven-days post sauna. Twenty three of the 31 completed a three month follow-up series of tests. Some veterans were in a control group that took all tests, then waited one month before repeating the tests and then entered the above program. No serious adverse events were encountered. Data analysis is not yet complete, but the great majority of participants reported improved health upon completion of the program. The critical question is whether this improvement lasts and whether the self-reported findings are reflected in the performance on the various tests and in the clinical chemistry profiles. The answer to these questions awaits completion of the data analysis.

Introduction:

Gulf War Illness is a serious and often severely disabling disorder affected approximately 25% of military personnel who were active in the 1990-1991 Gulf War in Kuwait. Many of the symptoms are neurological (pain, fatigue, insomnia, central nervous system alterations) but the gastrointestinal tract and bones and joints are often affected as well. The cause remains unknown, but must be a consequence of some specific characteristic of that war, as the exact profile of symptoms have not been seen in veterans of later Gulf Wars. A number of possibilities have been considered. These include specific immunizations, possible infections transmitted by insect vectors specific to the region, or exposure to depleted uranium. However most specialists believe that exposure to toxic chemicals is the most likely cause of Gulf War Illness. These chemicals might either act alone or in combination with the items listed above. There was widespread use of nerve gases in this war, and these are known to have long-lasting effects. There were massive oil fires, causing severe air pollution with very hazardous substances in the form of volatile organic chemicals, and particulates containing polyaromatic hydrocarbons and metals.

While significant research on Gulf War Illness, focused both on causes and possible treatments, has been performed through the Congressionally Mandated Research Program, there is still no consensus on the cause of Gulf War Illness and there is no treatment that has proven to be optimal for relief of symptoms. Our research study was designed to test whether the detoxification program originally developed by

Hubbard would result in a relief of symptoms of Gulf War Illness. The hypothesis behind this program is that a daily combination of exercise and sauna therapy with increasing doses of crystalline niacin for a period of three to six weeks will mobilize chemicals stored in the body and facilitate their removal, resulting in improved health. Niacin is vitamin B3, and has been used for many years as a treatment for elevated serum lipids. Niacin causes flushing and itching, and also is known to mobilize chemicals stored in body fat. The flushing and itching go away with continued exposure. In this program the dose of niacin administered is increased until the flushing and itching are no longer apparent, at which time the detoxification procedure is assumed to be complete.

Methods:

Veterans of the 1990-1991 Gulf War who met the Kansas criteria for having Gulf War Illness were recruited through electronic media, posters placed at veterans organization sites and with great assistance from several veterans organization. Initial contact with the Study Coordinator (Dr. Grant) was by telephone to determine whether the veteran met the study criteria. If he or she did, they met with Dr. Grant who explained the program and obtained a signed informed consent. They were then examined by the study physician (Dr. Romero) to determine whether they were medically fit for sauna therapy. A total of 32 veterans who met the criteria of Gulf War Illness signed the informed consent to participate in the study and were found to not have any medical condition that would preclude participation in the program. One veteran began the program but dropped out because of the flushing and itching, but the remaining 31 veterans completed the sauna therapy. While our initial proposal was for a sample of 50 Gulf War Illness veterans, delays in obtaining all official approvals and consequent expenditures before the project could begin resulted in the necessity of requesting approval, which was received, to limit the study to 30 Gulf War Illness veterans.

Each participant in the program was given a series of tests and provided a blood sample at three points in time, or in the case of those matched to a control group, at four points in time. At each of these times a blood sample was drawn for analysis of clinical chemistry parameters (comprehensive metabolic panel, lipid panel, complete blood count and thyroid panel) and a separate tube drawn and stored with expectation that later funding would allow analysis for serum polychlorinated biphenyls as a marker of chemicals stored in body fat. Each veteran also completed the SF36-V forms of quality of life, physical and mental status, the multidimensional fatigue inventory, the McGill pain questionnaire, the trailmaking test A and B, the grooved pegboard test, the Wechsler memory scale III-a test, the stroop color word test, the symptom checklists 90 test and the state-trait anxiety inventory test. For those veterans in the experimental group these tests were given immediately before entering the sauna therapy, seven days after and three month after completion of the sauna therapy. Nine Gulf War Illness veterans were matched to the control group. These persons took all of the above tests and blood draws, then went home for at least one month. Upon return they again took all of the tests, then entered the sauna therapy program and completed it as those in the experimental group.

The project established an office at the Severna Park Health and Wellness Center in Annapolis, MD and contracted with the staff there for administration of the Hubbard protocol. The protocol consisted of 20 to 30 minutes of aerobic exercise at the beginning of each session, followed by 2.5 to 4.5 hours in a moderate temperature (140-180 degrees) sauna. Supplements included polyunsaturated oils, vitamins, mineral and electrolytes as well as niacin at increasing concentrations as the therapy progressed. Frequent breaks with hydration were promoted.

Of the 31 veterans who completed the sauna detoxification program, 23 also completed the three-month follow-up series of tests. Those who did not do the three month follow-up were primarily from outside of the Baltimore-Washington area and did not want to travel back. One individual died of causes unrelated to the therapy and three were unable to complete that three month follow-up because the funding period had expired.

Results:

No results are available at present, as all of the quality of life and neurocognitive function tests are presented being entered into a standard data-base and prepared for analysis. We hope to have complete data analysis within the next three months. Most if not all of the veterans who completed the program reported that their health was improved and that they felt better than before they began the program. This may, of course, be only a result of regular exercise and supportive care for the duration of the therapy. This is why the analysis of the data of the three-month follow-up is so important as a measure of whether there is any long term benefit of this program.

Discussion:

At present we are unable to determine whether there is any long-term benefit of use of the detoxification program. We can state with confidence that there were no significant adverse effects of the therapy and that subjects, with one exception, were happy with the results and felt that their health was improved as a result of the therapy. However we have much work to do yet in the analysis of the results of the quality of life and cognitive tests, as well as the clinical chemical indicators of health. The blood samples taken for analysis of polychlorinated biphenyls are stored in a -80 degree freezer, and we will attempt to obtain funding to analyze these sample. This will be the ultimate test of the hypothesis that this detoxification program results in removed of toxins from the body. While polychlorinated biphenyls are not a toxin that is associated with the Gulf War, there are well documented to be a marker of a toxic chemical stored in body fat, and present in every person at measurable concentrations.



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