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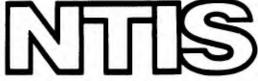
TREATMENT OF PNEUMONIA WITH OLEANDOMYCIN

E. S. Ryskina

Foreign Technology Division Wright-Patterson Air Force Base, Ohio

22 April 1974

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<sup>\*</sup> ye initially, after vowels, and after ъ, ь; e elsewhere. When written as ë in Russian, transliterate as yë or ë. The use of diacritical marks is preferred, but such marks may be omitted when expediency dictates.

## TREATMENT OF PNEUMONIA WITH OLEANDOMYCIN

E. S. Ryskina (Scientific Supervision by Senior Scientific Colleague A. M. Margolin)

In recent years the resistance of microbes to the most widely used antibiotics has grown significantly. Not infrequently an absence of clinical effect is noted when these antibiotics are used. Each new antibiotic expands our therapeutic capabilities, facilitates the battle with the appearance of resistant forms of microorganisms, and is of special value against resistance which has already appeared.

Oleandomycin is an antibiotic from the macrolide group. The oleandomycin producer is Streptomyces antibioticus. The spectrum of oleandomycin action was found to be similar to that of erythromycin. It is effective predominantly against gram-positive bacteria, certain gram-negative bacteria, large viruses, and rickettsiae. Oleandomycin activity is especially valuable with respect to pathogenic staphylococci which are resistant to the majority of antibiotics in use. Experimental study of oleandomycin showed the preparation to have low toxicity. Animal experiments established rapid absorption of oleandomycin with oral, intramuscular, and intravenous administration. A high concentration of

oleandomycin in the liver, gallbladder, lungs, and kidneys permitted the assumption that it would be effective against infections which localize in these organs.

The present observation touches on the application of the Soviet preparation of oleandomycin phosphate during treatment of pneumonia. We observed 100 patients, of which 78 had aggravated chronic pneumonia and 22 had acute pneumonia. The chronic pneumonia patients included 32 men and 46 women. The patients' ages ranged from 16 to 83 years. The majority of patients had suffered from chronic pneumonia for many years; only 20 patients showed a history of illness of five years or less. For the most part the patients had entered the hospital some 2-3 weeks after the beginning of aggravation. In the majority of patients profound organic changes were noted in the lungs. Oleandomycin therapy was directed with consideration of the sensitivity of sputum microflora. Dynamic research was conducted with 56 persons. Prior to the beginning of treatment a combination of Streptococcus viridans and Staphylococcus aureus predominated.

Oleandomycin was given in a dose of 250,000-500,000 units, four times per day. The duration of treatment was 7-10 days. Thus the overall dose was 7 to 20 million units. The treatment results were evaluated on the basis of a reduction in coughing and in the quantity of sputum, a reduction in physical changes in the lungs, and normalization of temperature, the blood picture, and X-ray data. Improvement was noted in 56 persons; 18 remained unchanged, while 4 showed aggravation and further progress of the disease. During treatment a change was noted in the microbial flora of the sputum. Most frequently this became a combination of Streptococcus viridans with the intestinal group; much more rarely Staphylococcus aureus was inoculated. Streptococcus viridans rapidly became resistant to oleandomycin.

In the cases of acute pneumonia oleandomycin was given to 22 patients, of which 15 received oleandomycin immediately after

admission to the hospital, while 7 were first treated with various antibiotics, with oleandomycin being prescribed in connection with retention of infiltration in the lung tissue, leukocytosis, and acceleration of the ESR. Improvement was noted in 17 persons, while there was no effect in 5 patients,

In the course of oleandomycin treatment no changes were observed in the cardiovascular system, liver, or kidneys. Eosinophilia was noted in the blood of 14 patients.

The patients withstood the oleandomycin well. In only a single case were we forced to drop oleandomycin, in connection with the appearance of urticaria. In one patient there was a single episode of vomiting while 7 showed minor stomach pains and increased frequency of stool. These phenomena did not provide a basis for terminating the treatment.

#### Conclusions

- 1. The Soviet preparation of oleandomycin phosphate gives a positive clinical effect in the treatment of pneumonia.
- 2. Application of oleandomycin in doses of 250,000-500,000 units four times a day is withstood well by the patients.
- 3. In connection with the rapid appearance of strains of microbes resistant to oleandomycin, it is desirable that it be prescribed after preliminary determination of the sensitivity of the sputum microflora and that it be considered a reserve [last-resort?] antibiotic.