

THE TREATMENT OF UNDULANT FEVER WITH SULFANILAMIDE

Report of a Case

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Undulant fever is a serious disease of great clinical importance. It is probable that acute cases occur much more often than is recognized. Chronic undulant fever is a frequent cause of an unexplained elevation of temperature.

The symptomatology of the acute and chronic types is not characteristic. In acute cases the disease may be suspected from the unexplained fever, the sweating, joint pain, and negative physical examination. The causative organism is difficult to grow in blood cultures. The agglutination test is usually positive and often to a high dilution. In chronic undulant fever the organism is also difficult to isolate and agglutination tests are often negative. Here, intradermal tests and the determination of the degree of phagocytosis of the organisms by the patient's leukocytes help greatly in making the diagnosis.

Even if the disease is suspected and the diagnosis is correctly made, the treatment has been very unsatisfactory. A specific vaccine may help in the acute form and specific and nonspecific vaccines, and induced hyperpyrexia seem of value in the treatment of some cases of the chronic type. Recently, sulfanilamide has been used in the treatment of acute undulant fever with very promising results. Stein and Blake¹ have reported three cases so treated with prompt clinical cure. Blumgart² has added another case successfully treated and has collected 13 cases treated by nine authors in Europe with apparent cure.

We have recently used sulfanilamide in the treatment of a patient suffering from acute undulant fever and rapid recovery has resulted.

REPORT OF CASE

A laborer was admitted to the Cleveland Clinic complaining of cough and pain in the chest. He stated that he had had a nonproductive cough for five weeks and that coughing produced a substernal pain. He had lost 23 pounds in weight and had become increasingly weak. He had had frequent chills followed by severe sweating since the onset of his illness. He had never been ill before.

On examination his temperature was 100° F. and the pulse rate 104. The lungs were clear on examination and the heart was negative. There were no significant findings otherwise. A special examination of the nose and throat revealed nothing of significance. The urine showed a heavy trace of albumin but no casts, pus cells, or red cells. The blood

count showed 4,280,000 red cells, 83 per cent hemoglobin, and 5,200 white cells with the following differential count: neutrophils, 62 per cent; lymphocytes, 37 per cent, and monocytes, 1 per cent. The blood urea was 30 mg., and the blood sugar 98 mg. per 100 cc. The blood Wassermann and Kahn tests gave negative reactions. The blood serum agglutinated *Brucella abortus* in a dilution of 1:2560. The blood culture was negative. A roentgenogram of the chest revealed no abnormalities.

The day following admission to the hospital, the temperature was as high as 102.2° F. Treatment with sulfanilamide was begun at once, 20 gr. being given with an equal amount of sodium bicarbonate every four hours day and night. The following day the sulfanilamide level in the blood was 19.5 mg. per 100 cc. The dose of the drug was decreased to maintain the concentration at 7 to 8 mg. The temperature returned to normal in one week and has remained so for three months. The agglutination was still positive in 1:640 dilution three months after admission. All the polymorphonuclear cells showed marked phagocytosis of *Brucella abortus* in a test of the opsonophagic power of the blood.

Comment: This patient lived in a country village and drank unpasteurized milk. There was no other apparent source of infection. It is possible that the cure of this patient was spontaneous but this is very unlikely. There is every probability that the cure was due to the sulfanilamide.

In giving sulfanilamide, it is most important to administer enough to keep the level of the blood constantly at the optimum level. The drug is excreted rapidly so should be given at least every four hours. We have found that 15 to 20 grains need be given at intervals of every four hours during the active stage of the infection. It seems evident that sulfanilamide is the treatment of choice in acute undulant fever.

REFERENCES

1. Stein, Robert L. and Blake, K. W.: Undulant fever; its treatment with sulfanilamide, J.A.M.A., 110:1550-1551, (May 7) 1938.
2. Blumgart, H. L.: Sulfanilamide in undulant fever, J.A.M.A., 111:521-523, (August 6) 1938.