

SULPHONAMIDE COMPOUNDS AND ACUTE RHEUMATISM

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INTRODUCTION

THE treatment of the established case of acute rheumatism is still in an unsatisfactory state. Many measures have been tried but none has been accepted as having an influence on the carditis.

Although salicylates are commonly used to control the fever and the joint pains, they do not control the damage to the heart valves and myocardium. Antistreptococcal sera have been used (Eason & Thomson, 1934), but the results have not been striking. Serum from convalescent rheumatic subjects has also been tried by Green, Glazebrook, Thomson & Hopkins (1939).

The causative agent of acute rheumatism has not been conclusively determined, but there is much circumstantial evidence to incriminate the haemolytic streptococcus. For this reason it was hoped that recent chemotherapeutic measures might prove useful. The general conclusion appears to be, however, that sulphonamide compounds are of little value in the treatment of florid rheumatism.

Swift, Moen & Hirst (1938) concluded that the use of sulphonamide could not be justified because not only did it produce no therapeutic benefit but the

amide to a group of rheumatic subjects and found that it had a marked effect in controlling recrudescences as compared with controls, when used in small doses over long periods.

It is accepted that acute rheumatism usually follows an upper respiratory tract infection, and it is generally held that this is due to the haemolytic streptococcus. An attack of tonsillitis due to the haemolytic streptococcus will produce a recrudescence of acute rheumatism in a known rheumatic subject (Schlesinger, 1930; Coburn, 1931).

Chemotherapeutic measures are accepted as being indicated in the treatment of streptococcal diseases. It might be that treatment of the tonsillitis with one of the sulphonamide compounds would prevent the development of acute rheumatism.

METHODS

The investigation described here was carried out in a large institution with a population of 1500 boys aged 15–20. There had been an epidemic of tonsillitis (2000 cases) and acute rheumatism (115 cases) during the previous year (Thomson & Glazebrook, 1941).

For a period every fourth case of tonsillitis admitted to the wards was treated with prontosil. The cases were not selected in any way except that a second attack of tonsillitis in a boy previously treated with prontosil was again treated with prontosil. Throat swabs were taken to demonstrate the presence of the haemolytic streptococcus, but treatment was begun before the results of the swabs were known. The total amount administered was 15–20 g. given over a period of 4–5 days.

RESULTS

The investigation was continued for 6 months, and there were sixteen cases of acute rheumatism in the two groups. Four of the cases occurred in the group whose preceding tonsillitis had been treated with prontosil, and twelve cases occurred in the group whose preceding attack was not treated with prontosil. The number of cases which occurred in the two groups was therefore in the ratio of the size of the groups. All of the cases in the test group were primary attacks. Four of the cases in the control group gave a history of a previous attack of acute rheumatism.

Haemolytic streptococci were cultured in large numbers from the throat swabs of the four cases of the test group, and from six of the cases of the control group, during their attacks of tonsillitis.

Only one of the four boys of the test group had an attack of tonsillitis between the date of joining and the attack of tonsillitis treated with prontosil. The intervals between the attack of tonsillitis and the onset of the attack of acute rheumatism were 15, 18, 21 and 28 days. None of the boys had an attack of tonsillitis between that attack treated with prontosil and the onset of the attack of acute rheumatism.

Three more cases occurred later and are not included in the controlled investigation. A boy suffering from pneumonia and whose sputum yielded a culture of haemolytic streptococci was treated with sulphapyridine. This boy developed acute rheumatism while still suffering from his attack of pneumonia. Two boys suffering from otitis media were treated with prontosil. Both developed acute rheumatism 2 weeks later. From one of these boys a rich culture of haemolytic streptococci was obtained. His rheumatism became clinically apparent while he was still receiving prontosil 0.5 g. t.d.s. by mouth.

The results of the investigation indicated that prontosil administered to upper respiratory infections in the dosage stated was unable to prevent the subsequent development of acute rheumatism.

SUMMARY

1. In a controlled experiment prontosil was used in the treatment of four cases of streptococcal tonsillitis. These cases subsequently developed acute rheumatism.

2. Two cases of otitis media and one case of streptococcal pneumonia, not in the controlled experiment, were treated with sulphonamide and sulphapyridine respectively. These cases developed rheumatism as a complication.

3. Haemolytic streptococci were recovered from twelve cases of respiratory tract infection which subsequently developed acute rheumatic fever.

We wish to acknowledge our gratitude to Profs. T. J. Mackie, C. H. Browning and D. M. Lyon for their stimulating encouragement, helpful criticism and support.

The expenses of this investigation were met by grants from the Carnegie Universities' Trust and the Leverhulme Trust.

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(*MS. received for publication 27. x. 41.—Ed.*)