Scarlet Fever in Taipei County

On January 19, 1987 the Bureau of Disease Control received two reports of Scarlet Fever from the Taipei County Health Department. A field investigation team was dispatched which cooperated with the local health authorities to clarify the situation and take necessary control measures.

The two reported cases of scarlet fever are siblings who live in the same household in Hsin-Tien City of Taipei County.

Case 1: Six-year-old elder sister, became ill on January 4th. She suffered from a high fever, sore throat and exanthem which had all developed on the same day. Patient was hospitalized through emergency room with a preliminary diagnosis of scarlet fever. A throat swab for culture and sera for Antistreptolizin O (ASO) and Rapid test for Identification of Group A Streptococcus C-Carbohydrate Antigen Extraction (Group A Strep ID) were done right away. Only the Group A Strep ID test showed a positive result; all other tests resulted in either non-conclusive or negative findings. Penicillin was administered parenterally and the patient responsed to the medication very well.

Case 2: 4-year-old younger brother, became ill on January 7th, three days after his elder sister's hospitalization. He suffered from symptoms and signs similar to Case 1, except that they were much milder. Patient was also hospitalized and underwent the same diagnostic procedures and treatment as Case 1. Results of the diagnostic procedures and the treatment were the same as in Case 1.

Case 1 and 2 were discharged on January 9th completely recovered.

Both cases' convalescent specimens of serum, throat and nasal swabs had been collected and were tested by the National Institute of Preventive Medicine and the Streptococcus Research Laboratory of National Taiwan University Hospital. All culture results were negative. Reports of the sera ASO and Streptozyme test(ASTZ) of Case 1 were 625 Todd and 800X respectively; as for Case 2's results were 250 Todd and 150X respectively. There is no doubt about the diagnosis of scarlet fever for Case 1, but Case 2's results showed only weak positive.

We visited all households of the immediate neighborhood and, also, the kindergarten which Case 1 was attending and found there was no other known case associated with these two cases from children in the neighborhood or from the 28 classmates and 77 other schoolmates of Case 1. Therefore, it was not necessary to give penicillin prophylaxis as an epidemic control measure to possible exposed population groups, especially household or other intimate contacts.

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Editorial note: The great majority of pharyngeal infections in children are not due to GABHS. Therefore, treatment prescribed before culture results are available may be

ineffective and may expose the patient needlessly to adverse effects. Withholding treatment until culture results are available will, according to objective evidence, often delay the patient's return to school or work by as much as two days. Several antigen detection procedures for the rapid identification of GABHS directly from throat swabs have been developed as possible alternatives to the conventional culture These tests use various techniques for extracting the group A carbohydrate antigen from the throat swab specimen and combine these with either a capillary precipitation, latex agglutination, coagulation, or enzyme-linked immunosorbent assay procedure. It takes only 15-75 minutes to run a test. These rapid diagnostic tests achieve a range of sensitivity from 83-95%, specificity from 98-100%, positive predictive value from 88-99%, and a negative predictive value from 93-99% when compared with the blood agar culture[1]. The only defects of these rapid tests are the expense and their disability of picking up specimens which do not have enough amount of bacteria. If the above defects can be solved by further development, these tests will probably be employed routinely for identifying GABHS in throat swabs while the patient is still in the physician's office. These tests expedite the diagnosis and treatment which should contribute much to the prevention of acute rheumatic fever and its sequelae.

In the meantime, until more is known about the true clinical significance of false negative rapid test results, negative antigen detection test results should be selectively confirmed by a blood agar culture by using the paired swabs technique.

Scarlet fever is still one of the eleven notifiable diseases in the Taiwan Area. Physicians who come across any suspected or true case of scarlet fever, by law, should report it to their local health authority. There have not been many cases of scarlet fever reported in the Taiwan Area except during the 1930's. We received no reports of scarlet fever for the last 10 years[2] until April of 1986[3]. The Bureau of Disease Control has launched a new communicable disease reporting system which has already been put on trial in Taipei City and County for one year beginning last October[4]. The response has been good and has stimulated physicians of other counties to start supporting this new reporting system. 21 cases of scarlet fever have already been reported for the previous 9 months. We especially appeal to all clinicians in the Taiwan Area to be aware of their obligations and responsibilities to public health and to observe the regulations of communicable disease control and give full support to the new communicable disease reporting system.

References:

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