Rheumatic Fever: Problems in Prevention

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Eradication of rheumatic fever (RF) remains as eluding, as a decade ago (Markowitz, 1970) as poverty still exists in the developed countries, and small epidemics of streptococcal infection with cases of rheumatic fever have occasionally been reported (Martin, 1981). Another pitfall in the control of RF is the false optimism that rheumatic fever tends to have spontaneous control and regression in different communities.

In many developed countries the decline in the incidence of rheumatic fever took place before the widespread use of antibiotics and steriods, and severity of rheumatic fever and cardiac involvement also decreased during this period of decline of disease.

Nevertheless, the interest in this disease has decreased out of proportion and timing to the decrease in the disease. Widespread discrepancy in the estimated RF surveillance makes its real incidence unknown in U.S.A., and this disagreement has persisted over a decade (Gordis et al., 1969; Rice et al, 1979). Evident need exists in U.S.A. for reevaluation of control programme for streptococcal infection sequelae (McCormick et al., 1978).

Harder criteria for diagnosis of acute rheumatic fever, and its relative disparity among Afro-Asians as compared to the European presentation, often makes an accurate diagnosis more difficult. Paucity of mucocutaneous manifestations and application of Jones criteria offer a formidable challenge to the diagnosis of RF and its lecur-rences (Okuni, 1971; Roy, 1973). Recurience of RF has to be differentiated from infective endocarditis, and for the latter the treatment has been updated (Bisno et al., 1981). Chorea often has a long incubation period after previous streptococcal infection, and long term follow-up has shown 25-35% incidence of carditis, emphasising the need for prophylaxis (Chen et al., 1981).

Pharyngitis is a common complaint in school children and laboratory diagnosis of streptocu-ccus hemolyticus, although standardized, remains tedious and time consuming. There is a great need for a simpler and universal antibody screening test but this does not seem to be available in the near future, Streptozyme test ('streptozyme measured antibodies'), relatively easier to perform, ofiers some promise in sensitivity but not in specificity (Kaplan et al., 1980). WHO Committee on prevention has emphasised that the clinical suspicion of possible streptococcal sore throat remains the main platform on which further action should be taken because of the poor laboratory facilities in most of the developing countries (WHO, 1980).

Best Weapon

For prevention a vaccine against the incriminating streptococcus could be the best weapon for the eradication of RF. Primary prevention, an epidemiologists' dream, by treating streptococcal sore throat as and when it occurs, leaves much to be desired. Out of every 2 to 4 cases of RF probably one develops rheumatic heart disease (RHD). The rate of acute RF following streptococcal pharyngitis is about 0.3-3.0%,and the cost of mass treatment of pharyngitis ('undetermined'), in susceptible groups (schools/barraks), outweighs cost/benefits of prevention. Yet, even in well doctored societies, only a fraction of cases attend a doctor for sore throat, and only one third of RF has antecedent sore throat ('clinical'). In order to prevent one case of RF, about 600-2000 cases of streptococcal sore throat ('diagnosed') will lequire treatment and about 1,600-10,000 cases of sore-throat ('without laboratory documentation') will have to be treated with penicillin (Davies et al., 1974).

Secondary prevention of RF, under the prevalent circumstances, remains the mainstay of preventive strategy. In a secondary prophylaxis programme, from an ever-striving group in New Delhi (Padmavati et al., 1978), a high drop-out (30%), substantial death rate (11%) and a significant streptococcal

infection rate (0.14 per patient-year), have been reported. Thus, three-weekly benzathine penicillin injection, recommended by some centres, requires critical evaluation. In a mammoth study, screening 40,000 school children in Delhi, with rheumatic heart disease prevalence of 11/1000, history of rheumatic fever was available only in 19% of cases and the incidence of beta-hamolytic streptococcal (infection was present in 24% of cases (Shrestha and Padmavati, 1979).

General practitioners who deal with most pharyngitis cases, initially and recurrently, exercise remarkable hesitancy for using penicillin, partly for the fear of anaphylactic reactions and partly for 'quicker results'.

Tetracycline management of pharyngitis should be avoided. Reaction rate with benzathine penicillin is lower than the ill-founded fears, for example out of 50,000 injections of benzathine penicillin reactions occurred only in 0.19% cases and there were only 3 instances of anaphylactic reactions and all of these were resussitated (Wannamaker, 1981). Padmavati (1981) has reported 1.1% reaction-rate, including all sorts of subjective and objective reactions.

Prevention of RF cannot forge aahead in isolation to the socio-economic condition of a country, and a two pronged attack on the cycle disease-poverty-disease is required (Ilyas, 1980). The cost of benzathine penicillin in this country doses not appear to be really an inhibitory factor in prevention. One injection costs one dollar and a year's prophylaxis twelve dollars, but the will to institute chemoprophylaxis is often lacking. It has been estimated that the cost of 3 injections ($3/-) saves the cost of one hospital day (Strasser, 1981). In China, unified network of country-commune-brigade health system controls surveillance and prevention programme effectively, with visible declining trends in the RF-RHD morbidity and mortality in the world's most populous country (Xuan, 1979).

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