TETRACYCLINE IN TRACHOMA*

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IN earlier reports (Agarwal and Gupta, 1954; Agarwal and Saxena, 1954), the sulphonamides and various antibiotics, including oxytetracycline (terramycin) and chlortetracycline (aureomycin), have been evaluated in the treatment of trachoma. A new antibiotic, tetracycline (Achromycin, Lederle), has recently been made available. In its pharmacological action and toxicity it resembles the two mentioned above; its clinical indications have not yet been defined though it is effective against a wide range of organisms, especially the Gram-positive and Gram-negative cocci, the rickettsiae, and certain viruses.

Material

One hundred patients with trachoma in the infiltrative or follicular stage, in which inclusion bodies could be seen, were selected for this study. The inclusion bodies were demonstrated by the technique described by Agarwal and Saxena (1954).

Fifty patients were used as controls, to whom no treatment was given except normal saline drops (Agarwal and Gupta, 1954).

Method

Fifty patients were given tetracycline capsules 250 mg. 6-hourly for from 8 to 10 days with local application of ointment in concentration of one per cent. two or three times a day.

The search for inclusion bodies was made in stained slides every 3 weeks. The treatment was continued for 6 weeks and a final examination and assessment was made at the end of this period. The presence and progression or retrogression of pannus was also recorded during the period of observation. The effect of the drug on secondary infection was noted. Such subjective symptoms as photophobia, redness, discharge, irritation, and gritty sensation were also taken into account, and the effect of the drug on them was noted.

Results

In computing the results the cases which could not be followed up have been taken as not cured. The results are summarized in the Table.

TABLE
RESULTS OF TREATMENT WITH TETRACYCLINE

Cases Treated	Clearance of Secondary Infection	Improvement of Secondary Symptoms	Percentage Disappearance of				Percentage Believed Cured
			Pannus		Inclusion Bodies		
			1st week	2nd week	3rd week	6th week	
50	24 hrs	48 to 72 hrs	14	26	30	10	40

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Untreated Cases.—Inclusion bodies were present in all three specimens of tissue scraping in all cases (Agarwal and Gupta, 1954; Agarwal and Saxena, 1954). There was no improvement in subjective symptoms. We concluded that simple scraping does not lead to the disappearance of inclusion bodies without specific treatment.

Treated Cases.—The secondary infection disappeared within 24 hours. The subjective symptoms took 2 or 3 days to disappear. The pannus retrogressed in most cases in from 5 to 13 days, but it disappeared completely in only 40 per cent. of cases, and in these also inclusion bodies could not be demonstrated. In other cases, though pannus could not be demonstrated by examination with a lens and loupe, it could be detected by slit-lamp examination. The inclusion bodies in these cases could still be seen at the termination of treatment.

Toxicity.—No local toxic effects were seen after the use of the drug; in many cases gastro-intestinal reactions in the form of loose motions developed but frank diarrhoea did not occur.

Discussion

So far three antibiotics of the tetracycline group have been made available for therapeutic purposes. Oxytetracycline and chlortetracycline have been used in this department in the treatment of trachoma with varying degrees of success (oxytetracycline 24 per cent.; chlortetracycline 40 per cent.).

It has also been observed that the trachoma virus shows a variable response to various therapeutic agents. Some authors have found the tetracycline group quite effective (Mitsui and Tanaka, 1951), and others (Shah, 1951; Siniscal, 1952) were disappointed at the results. In our hands these drugs have not given a very encouraging response.

After using pure tetracycline, Mitsui and others (1955) reported 78 per cent. cure and 13 per cent. improvement. Similar results were obtained by Tsutsui (1955), who even asserts that a 100 per cent. response can be obtained in acute cases of trachoma. Our results however do not allow us to share this optimism. The response to tetracycline indicates that it is an effective agent against the trachoma virus in about 40 per cent. of cases as shown by disappearance of inclusion bodies from the smear. Like erythromycin it seems to be a quick acting drug, for in about 30 per cent. of our cases inclusion bodies were absent from the smear in the 3rd week, and the secondary infection cleared in a very short time. The subjective symptoms also showed a uniform response and pannus retrogressed in all cases which seemed to be cured. The drug seems to be of special value in trachomatous keratitis, as the disappearance of corneal lesions only takes about 2 weeks. In a few cases, when cure was not obtained, the pannus retrogressed considerably but not completely. This suggests that the formation of pannus, though primarily a manifestation of trachoma, is accentuated by some secondary

infection, and that the clearance of this secondary infection by tetracycline is responsible for its retrogression. The effect of the drug in these cases may have been rather slow, and the results might have been better if the treatment had been prolonged. Tetracycline does not compare favourably with sulphonamide, but may be worth trying in sulphonamide-resistant cases.

Summary

(1) The study of one hundred cases was controlled by the demonstration of inclusion bodies by conjunctival scraping at intervals of 3 weeks.

(2) Tetracycline was found to be quick acting and effective in 40 per cent. of cases.

(3) Oral therapy (32 to 40 capsules of 250 mg.) combined with local ointment of one per cent. is recommended.

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