GANTRISIN AND MADRIBON IN TRACHOMA*

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ALTHOUGH the use of topical sulphonamides, as compared with antibiotics, is becoming less popular in the mass or community treatment of trachoma, the introduction of long-acting sulphonamides has renewed the interest of trachomatologists in their suitability for use in such programmes. Clinical trials with Lederkyn conducted by Bietti and Lanzieri (1957), Rochat (1958), Lanzieri and Latte (1960), Mann (1960), and Mitsui, Konishi, Kinouchi, and Kajima (1963) have shown that it was effective against trachoma and associated conjunctivitis even in small doses. As well as Lederkyn there are a number of other products (Madrison, Orisul, Bayrena, etc.) which it is claimed have similar properties, but which have not yet been put to adequate trial against trachoma. Recently, Hildenbrand (1961) reported encouraging results with combined therapy (local Gantrisin and oral Madribon tablets) in trachomatous cases. Nema, Bal, Nath, Mathur, and Shukla (1965), using Gantrisin in trachoma, obtained satisfactory results both by continuous and by intermittent schedules of treatment.

The present double-blind study was therefore undertaken to assess the value of topical Gantrisin (sulphafurazole) and oral Madribon (sulphadimethoxine) tablets, alone or in combination, in trachomatous schoolchildren, using different schedules of administration.

Material and Methods

During the month of October, 1963, nearly 2,100 children belonging to 9 primary municipal schools in Aligarh were screened for their trachoma status with the help of a binocular loupe (X 2.5); 265 children with active trachoma whose ages ranged between 5 and 13 years were selected for the study. The clinical findings, stages of trachoma (W.H.O., 1962), and associated conjunctivitis were recorded on specially designed individual record cards. The cases were randomly divided into four more or less identical groups (A, B, C, and D). Group B was further divided into two sub-groups B1 and B2. Group A (78 cases) was given combined therapy (topical Gantrisin drops and oral bi-weekly Madribon tablets); sub-groups B1 (41 cases) and B2 (42 cases) oral Madribon tablets bi-weekly and weekly respectively; group C (62 cases) topical Gantrisin drops 15 per cent.; and group D (42 cases) served as control (no treatment group). Gantrisin drops were instilled twice daily for five days in a month for five consecutive months. Dosage of Madribon tablets was calculated on the basis of approximately 100 mg. per kg. body-weight.

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The "criterion of cure" adopted in the trial was the same as that recommended by the W.H.O. Expert Committee on Trachoma (1962). The children were re-examined soon after treatment. The final assessment of cases regarding the cure of trachoma and associated conjunctivitis was made after a further follow-up of five months.

Results

The cure rates obtained soon after the termination of treatment were 60.2 per cent., 39.0 per cent., 33.3 per cent., and 53.2 per cent. in groups A, B1, B2, and C respectively against 14.3 per cent. spontaneous cures obtained in control group D. The final examination after follow-up revealed a rise in the cure rates of groups A (74.3 per cent.), B1 (63.4 per cent.), B2 (50.0 per cent.), and D (16.7 per cent.), while group C (43.6 per cent.) showed a fall (*see Table*).

TABLE
RESULTS OF TREATMENT WITH GANTRISIN DROPS AND MADRIBON TABLETS IN CASES OF
TRACHOMA AND CONJUNCTIVITIS

Groups*	TRACHOMA									
	Initial Examination		First Re-examination				Final Examination			
	Active	Per-centage	Cured	Per-centage	Un-cured	Per-centage	Cured	Per-centage	Un-cured	Per-centage
A	78	100	47	60.2	31	39.8	58	74.3	20	25.7
B1	41	100	16	39.0	25	61.0	20	63.4	15	36.6
B2	42	100	14	33.3	28	66.7	21	50.0	21	50.0
C	62	100	33	53.2	29	46.8	27	43.6	35	56.4
D	42	100	6	14.3	36	85.7	7	16.7	35	83.3

CONJUNCTIVITIS										
A	23	100	15	65.1	8	34.9	11	47.8	12	52.2
B1	8	100	4	50.0	4	50.0	3	37.5	5	62.5
B2	9	100	4	44.4	5	55.6	3	33.3	6	66.7
C	12	100	6	50.0	6	50.0	3	25.0	9	75.0
D	9	100	1	11.2	8	88.8	1	11.2	8	88.8

*Group A—Topical Gantrisin drops and oral bi-weekly Madribon tablets
 Group B1—Madribon tablets bi-weekly
 Group B2—Madribon tablets weekly
 Group C—Topical Gantrisin drops
 Group D—No treatment (control)

Discussion

Despite the introduction of antibiotics there remains a wide range of indications for sulphonamide therapy. Its value in the treatment of trachoma has long been established. Siniscal (1950, 1955), El Bayadi (1954), and Agarwal and Gupta

(1954) reported significantly high cure rates in trachoma treated with sulphonamides as compared with antibiotics. Our present trial confirms the usefulness of sulphonamide therapy by both local and oral routes in the treatment of trachoma, as we obtained 74.3 per cent., 63.4 per cent., 50.0 per cent., and 43.6 per cent. cures in groups A, B1, B2, and C respectively. Their results are highly significant when compared with the control group ($\chi^2 = 40.54$ for 4 degrees freedom, $P < 0.01$).

Comparison of results soon after termination of treatment and after five months follow-up revealed a higher incidence of cures in groups A, B1, and B2, but a lower incidence in group C. These differences are not, however, statistically significant ($t = 1.88$ for 4 degrees freedom $0.2 < P > 0.1$). If the associated conjunctivitis is taken into consideration simultaneously, it would be observed that all groups (A, B1, B2, and C) showed a fall in the cure rates at the time of final assessment compared with the cures obtained at the termination of treatment (see Table). These differences are statistically just significant ($t = 3.55$ for 4 degrees freedom $0.05 < P < 0.02$).

The relative significance of the combination and mode of administration of Gantrisin and Madribon were ascertained by comparing different groups with one another. Such an analysis showed that combined therapy with local Gantrisin and oral Madribon tablets (group A) was found to give significantly better results when compared with groups B2 ($\chi^2 = 8.32$ for 1 degree freedom $P < 0.01$) and C ($\chi^2 = 15.07$ for 1 degree freedom $P < 0.01$). The cure rates of group A and B1, however, did not show any significant difference ($\chi^2 = 2.07$ for 1 degree freedom $P > 0.05$). Hildenbrand (1961), in his study in Bantu children, has reported better results with combined therapy when compared with Gantrisin or Madribon alone. Groups B1 (bi-weekly Madribon) and B2 (weekly Madribon) were separately evaluated statistically. The value of the χ^2 was found to be 2.12 for 1 degree of freedom, inferring thereby that there was no evidence of B1 having any superiority over B2, and that the difference in cure rates might just be chance.

Bietti (1961), using Lederkyn 80–100 mg. per kg. body-weight every seventh day, in Tripoli and Misurata obtained nearly 68.1 per cent. cure of trachoma, but we could get only 50.0 per cent. using Madribon in a similar schedule of treatment. The difference is significant ($\chi^2 = 5.18$ for 1 degree freedom $P < 0.01$), but it is not valid to compare our results with those of Bietti, as the severity of trachoma varies from country to country.

We can therefore suggest that long-acting sulphonamides have a definite place in the treatment of trachoma. Considering their low dosage and freedom from side-effects, they might be utilized in the Mass Trachoma Control Programme. Local sulphonamide treatment could be combined with oral sulphonamides in refractory cases of trachoma to achieve higher cure rates.

Summary

The suitability of local Gantrisin and oral Madribon, alone or in combination with different schedules of administration, was ascertained in 223 trachomatous school-children.

Combined therapy with local Gantrisin and oral Madribon resulted in higher cures in trachoma when compared with local Gantrisin or oral Madribon alone. Madribon orally in approximately 100 mg. per kg. body-weight at weekly intervals yielded a 50 per cent. cure rate in trachomatous children in Northern India.

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