CHLORAMPHENICOL, FURAZOLIDONE AND THEIR COMBINATIONS IN THE TREATMENT OF ENTERIC FEVER*

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Meerut

Enteric fever is still one of the commonest infectious diseases seen in this country. Although chloramphenicol has been considered to be the drug of choice in its treatment, its continued use has been associated with certain problems. Chloramphenicol resistant organisms have been isolated in untreated subjects (Murthi 1962). Chloramphenicol therapy does not eradicate the “carrier state” and is a well known marrow depressant. This prompted the search for a more suitable antimicrobial agent.

Ampicillin has been found to be effective in treatment of enteric fever (Sanders 1965), but apart from being very expensive the clinical response is also slower as compared to chloramphenicol. Yurcheco et al. (1953) first reported the antimicrobial properties of furazolidone, a nitrofuran derivative, on a wide spectrum of Gram positive and Gram negative bacteria including Salmonella typhi and S. paratyphi. Since then there have been a number of publications of therapeutic trials with furazolidone in enteric fever. Recently, a combination of chloramphenicol and furazolidone has also been tried (Thiruvengadam 1971) with the thought that both drugs will act in a synergistic manner reducing the dosage of both.

Material and Method

A trial to observe the efficacy of chloramphenicol, furazolidone and a combination of these two drugs in the treatment of enteric fever was started in May 1975 in the children’s ward of the L.L.R.M. Medical College, Meerut. This report deals with 51 patients treated until the end of October, 1976.

All patients with pyrexia were carefully examined. Those without any localizing signs and suspected to be cases of typhoid fever on a clinical basis were included. In all cases, routine examination of blood, urine, P.P.D. and blood smear for malarial parasites were done. The blood was obtained for blood culture and Widal test.

The response to therapy, i.e., the number of days for defervescence and occurrence of any complications or side-effects of the drug therapy was recorded. The treatment was continued for 5 days after the patient became afebrile. Apart from this, patients were given multivitamin preparations and if needed, antipyretics. Corticosteroids were not used in any case.

The patients were randomly allocated to the following groups of the dosage schedule.

Group I. Chloramphenicol : 50 mg/kg/day in 3-4 divided doses;
Group II. Furazolidone : 7.5-10 mg/kg/day in 3-4 divided doses;
Group III. Furazolidone 25 mg + chloramphenicol 65 mg (in 1 capsule)

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Table 1. 

<table>
<thead>
<tr>
<th>Age in Yrs.</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Pts.</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>51</td>
</tr>
</tbody>
</table>

For 20 kg body weight: 4 capsules/day;

Group IV. Furazolidone 38 mg + chloramphenicol 32 mg (in 1 capsule)
For 20 kg body weight: 4 capsules/day.

Observations

Of the 51 children, 39 were male and 12 female. None of the patients was under 3 years of age. The age distribution is shown in Table 1.

The following table shows number of days taken for defervescence in various treatment groups and treatment failure.

The days taken for defervescence were between 3-6 days in the chloramphenicol group and 3-7 days in the furazolidone group. There was no treatment failures in either. In Group III and Group IV it took longer for the pyrexia to decrease and one case in each group did not respond properly. As these two cases were very toxic, they had to be treated with parenteral chloramphenicol.

Apart from a few cases of nausea and/or vomiting in the furazolidone group, no troublesome side-effects were observed.

Discussion

The role of furazolidone in the treatment of enteric fever appears to be established. The time taken for defervescence is slightly different in various treatment groups in our series and it is difficult to draw any conclusions. There was 100 per cent success in groups of patients treated either with chloramphenicol or with furazo-

Table 2: Result of therapy.

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>No. of Patients</th>
<th>No. of days taken for defervescence</th>
<th>Treatment Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Range</td>
</tr>
<tr>
<td>Group I</td>
<td>14</td>
<td>4.5</td>
<td>3-6</td>
</tr>
<tr>
<td>Group II</td>
<td>13</td>
<td>5.0</td>
<td>3-6</td>
</tr>
<tr>
<td>Group III</td>
<td>12</td>
<td>6.0</td>
<td>4-9</td>
</tr>
<tr>
<td>Group IV</td>
<td>12</td>
<td>5.5</td>
<td>3-9</td>
</tr>
</tbody>
</table>