In conclusion, we suggest that relatively high Toxoplasma gondii IgG levels combined with a CD4+ cell count < 150/µl in HIV-infected patients can be highly predictive of TE. Serological tests could therefore be particularly useful for early diagnosis of TE in patients with unspecific symptoms or for confirmation of the diagnosis in combination with radiology in patients with suspected TE, permitting early institution of systemic TE prophylaxis or treatment.

References


Antibiotic Resistance in Shigella and Salmonella in a Region of Lithuania

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To gather information on the antibiotic susceptibility of Shigella and Salmonella in the Baltic countries, 98 Shigella and 100 Salmonella isolates collected consecutively in 1994 were examined. All Shigella isolates were resistant to at least two of 12 antibacterial agents: 100% were resistant to oxytetracycline, 92% to trimethoprim/sulfamethoxazole, 64% to chloramphenicol, and 64% to ampicillin. Five different resistance patterns were observed.

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4 Statens Seruminstitut, Copenhagen, Denmark.
Table 1: Antimicrobial susceptibility of 98 Shigella isolates as determined by the E-test.

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>MIC 50</th>
<th>MIC 90</th>
<th>Range</th>
<th>Percent susceptible*</th>
<th>Percent resistant*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampicillin</td>
<td>256</td>
<td>256</td>
<td>1-256</td>
<td>36</td>
<td>64</td>
</tr>
<tr>
<td>Cefotaxime</td>
<td>0.094</td>
<td>0.208</td>
<td>0.032-6</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Aztreonam</td>
<td>0.047</td>
<td>0.125</td>
<td>0.023-0.5</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Macillinam</td>
<td>0.094</td>
<td>0.19</td>
<td>0.032-6</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>2</td>
<td>2.3</td>
<td>1-3</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Oxytetracycline</td>
<td>256</td>
<td>256</td>
<td>256-256</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>TMP/SMX</td>
<td>32</td>
<td>32</td>
<td>0.032-32</td>
<td>8</td>
<td>92</td>
</tr>
<tr>
<td>Chloramphenicol</td>
<td>256</td>
<td>256</td>
<td>1.5-256</td>
<td>36</td>
<td>64</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>0.016</td>
<td>0.018</td>
<td>0.008-0.032</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Nalidixic acid</td>
<td>2</td>
<td>3</td>
<td>1.5-6</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

* According to current NCCLS guidelines (2).

Ninety-six Salmonella isolates (77% of which were serotype Enteritidis) were sensitive to 11 antibiotics; the remaining four were resistant to oxytetracycline. It is concluded that the frequent antibiotic resistance in Shigella is related to the overuse of antibiotics in humans. Periodic surveillance of bacterial resistance to antibiotics is warranted in Lithuania, the results of which could be used as a basis for a rational policy of antibiotic usage.

Data on the prevalence of resistance to antibiotics are not available from the Baltic countries, where Shigella and Salmonella account for a dominant proportion of diarrhoeal disease. In the Kaunas region in Lithuania, it is common practice to treat even mild cases of diarrhoea with the few available peroral antimicrobial agents. Therefore, the aim of this study was to examine the antimicrobial susceptibility of fresh isolates of Shigella and Salmonella in order possibly to adjust the guidelines for the use of antibiotics.

Materials and Methods. During the period 22 April 1994 to 11 October 1994, 1262 patients (age range, 3 weeks – 88 years) were hospitalised due to diarrhoea with or without fever in the Clinic of Infectious Diseases in Kaunas, Lithuania. All patients were examined by stool culture for Shigella and Salmonella. The Clinic of Infectious Diseases in Kaunas is a 300-bed specialised regional hospital providing medical care for children and adults.

Salmonellae were isolated from 100 patients during the above-mentioned period, and Shigellae were isolated from 98 patients during the period 9 May to 2 September 1994. Before antibiotic treatment was initiated, two stool specimens from each patient were taken with a rectal spoon, suspended in sterile physiological saline, and processed in the microbiological laboratory of the Clinic within 1 h. Material was inoculated on to three plates containing Endo agar, Ploskirevo agar (both from the Russian Ministry of Medical Industry, Russia), or desoxycholate-citrate-lactose-saccharose agar (DCL agar; Oxoid, UK), respectively. Specimens were also enriched in magnesium-containing broth and subsequently seeded on DCL agar. Salmonella- and Shigella-like colonies were identified by conventional biochemical tests (Kligler iron, indole, urea, lysin decarboxylase, malonate, Simmons citrate, mannitol, and motility). Agglutination tests were performed on slides using antisera from the Russian Ministry of Health (Moscow Metchnikov Research Institute for Vaccines and Sera, St. Petersburg Research Institute for Vaccines and Sera). The isolates were stored in Extract agar (Statens Seruminstitut, Denmark) for further examination at the Department of Clinical Microbiology, Bispebjerg Hospital, University of Copenhagen, Denmark, and at the Laboratory for Enteric Pathogens, Statens Seruminstitut, Copenhagen, Denmark.

Minimum inhibitory concentration determinations were performed in Denmark by the agar disk diffusion method using Danish agar (Sensitivity Testing Medium, Statens Seruminstitut) and sensitivity disks (Neo-Sensitabs, Rosco, Denmark). Shigella isolates were tested against 12 antibiotics: ampicillin, aztreonam, mecillinam, cefotaxime, cefoperazone, oxytetracycline, chloramphenicol, trimethoprim/sulfamethoxazole, gentamicin, polymyxin, ciprofloxacin, and nalidixic acid. Salmonella isolates were tested against the same antibiotics, excluding nalidixic acid.