Table 1. Isolation of yeasts and relative sizes of T lymphocyte subsets.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Total no. (%)</th>
<th>&lt;500</th>
<th>501-750</th>
<th>751-1,000</th>
<th>&gt;1,000</th>
<th>Trend*</th>
<th>&lt;500</th>
<th>501-750</th>
<th>751-1,000</th>
<th>&gt;1,000</th>
<th>Trend*</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of subjects</td>
<td>79</td>
<td>16</td>
<td>22</td>
<td>20</td>
<td>21</td>
<td></td>
<td>6</td>
<td>20</td>
<td>18</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Yeast carriers (any species)</td>
<td>67 (85%)</td>
<td>15</td>
<td>18</td>
<td>14</td>
<td>20</td>
<td>N.S.</td>
<td>5</td>
<td>19</td>
<td>16</td>
<td>27</td>
<td>N.S.</td>
</tr>
<tr>
<td>Carriers of:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>C. albicans</em></td>
<td>15 (19%)</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td><em>P = .007</em></td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>N.S.</td>
</tr>
<tr>
<td>Other <em>Candida</em> spp.†</td>
<td>9 (11%)</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>N.S.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>N.S.</td>
</tr>
<tr>
<td><em>S. cerevisiae</em></td>
<td>42 (53%)</td>
<td>8</td>
<td>14</td>
<td>10</td>
<td>10</td>
<td>N.S.</td>
<td>4</td>
<td>10</td>
<td>10</td>
<td>18</td>
<td>N.S.</td>
</tr>
<tr>
<td>Miscellaneous yeasts‡</td>
<td>20 (25%)</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td><em>P = .04</em></td>
<td>0</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

NOTE. The pharyngeal yeast flora was sampled in 79 Zairians (64 males, 15 females) with cotton-stick swabs that were transported in semisolid malt-extract agar and plated on malt-extract agar and Sabouraud dextrose agar at 25 and 35°C. Any growth of yeasts within four weeks was recorded as positive and speciation was done according to Lodder [3]. Numbers of OKT4+ and OKT8+ lymphocytes were assessed as described elsewhere [2]. Patients with Kaposi's sarcoma and controls revealed similar carriage rates and were not immunologically different [2]; therefore, these were analyzed as one group.

* Test for linear trend (BMDP statistical software).
† Carriers of other *Candida* spp. (no. of subjects): *Candida parapsilosis*, 4; *Candida krusei*, 2; *Candida tropicalis*, 2; *Candida brumptii*, 1; *Candida valida*, 1; *Candida vini*, 1.
‡ Carriers of miscellaneous yeasts (no. of subjects): *Hansenula anomala*, 3; *Hansenula subpelliculosa*, 1; *Trichosporon capitatum*, 5; *Trichosporon fermentans*, 1; *Pichia membranaefaciens*, 7; *Kloeckera* spp., 2; unclassified, 3.

Intestinal Anthrax with Bacteriological Investigations

COLLEAGUES - A 40-year-old man was admitted with a history of severe abdominal pain and loose stools of one day's duration. He had vomited once 4 hr before admission. There was history of consumption of meat from the carcass of a diseased cow. The patient was restless, incoherent, grossly dehydrated, and afebrile. Diastolic blood pressure was not recordable. Pulse was 126/min and respiration 28/min. The upper abdomen was distended and tense. Free fluid was present in the abdomen. Neither mass per abdomen nor bowel sounds were present. Other systems were normal. Ileus ascites and upward displacement of the diaphragm were seen in the plain roentgenogram of abdomen and chest, respectively. Clinically the patient was in shock, with massive, rapidly filling hemorrhagic ascites. As his general condition did not permit surgical intervention, he was treated with iv gentamicin, ampicillin, and massive doses of steroids. However, his condition steadily deteriorated, and he died 12 hr after admission.

Diagnosis. The ascitic fluid was grossly hemorrhagic and turbid with a leukocyte count of 5,200/mm³, numerous erythrocytes, and elevated protein. The fluid examined by gram stain showed large, capsulated, gram-positive, nonsporulating bacilli in chains and pus cells. Large, gray, nonhemolytic colonies were grown on sheep blood agar. The organisms were nonmotile and failed to ferment salicin. They liquefied gelatin slowly. They were susceptible to ampicillin, chloramphenicol, erythromycin, gentamicin, kanamycin, penicillin, streptomycin, and tetracycline, and the "string of pearls" test was also positive. The organisms were presumptively identified as *Bacillus anthracis* and confirmed by guinea pig virulence test performed at the Institute of Animal Health and Veterinary Biologicals, Bangalore.

Unique features. The most severe and rare form of anthrax is the gastrointestinal type. To date there are nine reported cases of gastrointestinal anthrax [1, 2]; this is the 10th case. The rapidly filling hemorrhagic ascites was the unique feature of this case. The hemorrhagic nature of the ascitic fluid prompted us to do a gram stain and culture; this was based on our earlier experience with a case of anthrax meningitis associated with hemorrhagic CSF [3].

Conclusion. Anthrax continues to be endemic in certain parts of India. It is known to occur as a sporadic disease among sheep and cattle in Karnataka State, southern India (B.S. Keshavamur-
did not because all strains were equally susceptible by the disk diffusion method (one disk for TMP-SMZ). The MICs for 107 strains of Brucella melitensis isolated from patients who experienced a relapse and those who were treated with TS. Of major importance was the striking difference in relapse rates. This cannot be attributed to differences in the laboratory methods for identification are simple.

PREMA BHAT, D. NAGAMANI MOHAN, H. SRINIVASA

The relapse rate (~15%) for patients with human brucellosis treated for three weeks with the tetracycline-streptomycin combination (TS) recommended by the World Health Organization has stimulated the search for new therapeutic modalities, especially in countries of the Mediterranean basin where the disease continues to be endemic. In 1973, Daikos and coworkers [1] reported the first large series of patients with brucellosis due to Brucella melitensis who were treated with co-trimoxazole (TMP-SMZ) with apparently good results. To date, controlled trials confirming the results gained from their preliminary, noncomparative study have not been reported. In spite of this, some authorities have recommended TMP-SMZ as a good alternative to the classical TS treatment [2].

A relapse rate of 40% among patients with brucellosis treated with TMP-SMZ and included in an open study by our group in 1978 [3] prompted us to perform the present prospective, randomized trial (table 1). As expected, both antibiotic regimens initially controlled the signs and symptoms of the disease in all patients, although the defervescence period was shorter in the group treated with TS. Of major importance was the striking difference in relapse rates. This cannot be attributed to differences in susceptibility to the antibiotic combinations between the strains isolated from patients who experienced a relapse and those who did not because all strains were equally susceptible by the disk diffusion method (one disk for TMP-SMZ). The MICs for 107 strains of B. melitensis isolated from a group of patients studied at a later date (data not shown) were ≤0.5 μg of TMP and 9.5 μg of SMZ/ml in all cases (100%); thus, the dosage of three tablets of TMP-SMZ administered every 12 hr to our patients appears to sufficiently attain serum levels several times higher than the MICs. The unacceptably high percentage of relapse for patients treated with TMP-SMZ was similar to that obtained in our previous open study. The majority of the patients who had a relapse had symptoms within the first two months after therapy, and in all except one cultures of blood became positive again. The results of our study strongly suggest that TMP-SMZ administered for 45 days is not a good alternative for the treatment of human brucellosis. This conclusion is supported by the well-known, low activity of TMP (the component of TMP-SMZ with good penetration into the cells) against Brucella spp. in vitro, as well as with the results obtained from experimental brucellosis in the mouse model [4].

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References


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Comparative Trial of Co-Trimoxazole Versus Tetracycline-Streptomycin in Treating Human Brucellosis

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