Table 1. Results of susceptibility testing for 90 Neisseria meningitidis isolates from population-based surveillance in the United States.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Susceptible</th>
<th>Intermediately resistant</th>
<th>Resistant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin</td>
<td>87 (97)</td>
<td>3 (3)</td>
<td>0</td>
</tr>
<tr>
<td>Rifampin</td>
<td>87 (97)</td>
<td>0</td>
<td>3 (3)</td>
</tr>
<tr>
<td>Sulfadiazine</td>
<td>41 (46)</td>
<td>23 (26)</td>
<td>26 (29)</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>90 (100)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* MICs: susceptible, ≤0.06 μg/mL; intermediately resistant, 0.1–1 μg/mL; resistant, ≥2 μg/mL.
* MICs: susceptible, ≤1 μg/mL; intermediately resistant, 2 μg/mL; resistant, ≥4 μg/mL.
* MICs: susceptible, ≤16 μg/mL; intermediately resistant, 32–64 μg/mL; resistant, ≥128 μg/mL.
* MICs: susceptible, ≤0.25 μg/mL.

Relief of Psychiatric Symptoms in a Patient with Crohn’s Disease after Metronidazole Therapy

The scant reports of an increased prevalence of gastrointestinal (GI) disease in psychiatric patients [1] may not adequately reflect the extent of this association, since these patients may not complain of GI symptoms until specifically questioned [2]. Although there are scattered reports of a possible association between Crohn’s disease and psychiatric illness [3], to our knowledge, we report the first case of a patient with Crohn’s disease whose psychiatric symptoms abated following antimicrobial treatment.

Rifampin, ciprofloxacin, and ceftriaxone remain appropriate agents for chemoprophylaxis for close contacts, although vigilance for therapeutic failures due to antimicrobial resistance is clearly indicated. Continued surveillance of meningococci for antimicrobial resistance will allow early detection of changes in susceptibility patterns that might affect recommendations for chemoprophylaxis, as well as for treatment.

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References

with metronidazole (250 mg t.i.d.), prednisone (40 mg/d), and mesalamine (80 mg t.i.d.) was initiated, and within 2 weeks, both his GI and psychiatric symptoms dramatically abated. Although the mesalamine dosage was continued without change, metronidazole treatment was discontinued at 4 weeks, and the prednisone dosage was tapered to a maintenance dosage of 15 mg every other day over 3 months.

Subsequent deterioration in behavior was first noted 2 months after metronidazole treatment was discontinued (while he was still receiving mesalamine treatment and the maintenance dosage of prednisone). At admission to Rush Children’s Hospital (Chicago), he had only trace abdominal tenderness, heme-negative stool, and an ESR of 18 mm/h. Colonoscopy confirmed active lesions in the right colon consistent with Crohn’s disease. There was no evidence of luminal stricture or narrowing related to Crohn’s disease. Electroencephalograms obtained throughout a 24-h period were normal. Treatment with prednisone (60 mg/d) and mesalamine (800 mg t.i.d.) was initiated for his Crohn’s disease, with the prednisone dosage tapered to 20 mg/d after several months. Although his subtle GI symptoms resolved, his psychotic condition failed to improve, despite further treatment with antipsychotic agents, including lithium, pimozide, valproic acid, flufenazine, and clozapine.

Finally, 3 months after the psychiatric relapse, a second 1-month course of metronidazole (500 mg t.i.d. orally for 30 days) was initiated. Within 3 weeks, a dramatic improvement in his psychiatric condition was again noted, and by 5 weeks, he was essentially normal and not receiving any antipsychotic medication. Five months later, he remained free of psychiatric and GI symptoms, although repeated colonoscopy confirmed that his Crohn’s disease was quiescent.

The cause of the observed improvement in this patient’s psychiatric condition is unknown. Treatment with prednisone and mesalamine was continued throughout his course, and although these agents may have contributed to improvement in his condition, the behavioral changes were not noted on either occasion until the addition of metronidazole therapy. This finding suggests that improvement may have been due, at least in part, to this latter agent.

If this fact is true, the mechanism of action is not known. It is intriguing to speculate that benefit may have been secondary to an antimicrobial action of metronidazole. For example, it is at least conceivable that an opportunistic neurotoxin-producing organism may have colonized the GI tract. Both Crohn’s disease [4] and broad-spectrum antimicrobials are known to alter the GI flora, which might have allowed such colonization. This patient had both risk factors, the latter including frequent exposure to broad-spectrum antibiotics for several years prior to the onset of his psychiatric symptoms.

Psychiatric symptoms have previously been associated with altered intestinal flora. For example, patients with D-lactic acidosis (a condition caused by bacterial overgrowth in the small intestine) may present with a range of behavioral changes (e.g., hostility, slurred speech, stupor, deranged mental status, dizziness, and ataxia), and treatment with oral antibiotics usually results in rapid improvement [5]. Whatever the mechanism, further research into a possible gut microbe–brain connection may be helpful.

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References

Outbreak of Q Fever Following a Safari Trip

Travelers returning from the tropics may acquire miscellaneous febrile respiratory illnesses. Reports of Q fever pneumonia acquired by travelers are anecdotal, and a cluster or outbreak of Q fever pneumonia has never been reported [1, 2]. We describe an outbreak of Q fever in safari travelers.

A 41-year-old man presented with fever (temperature, 38.2°C), headache, and backache of 3 days’ duration. Four weeks earlier, he had headed a group of 50 employees on a 1-week safari trip to Kenya. His initial physical examination was unremarkable. Three days later, he presented again with continuing fever and a mild cough. His erythrocyte sedimentation rate was 86 mm/h, and microscopic hematuria was found. Smears were negative for malarial parasites. Treatment with ciprofloxacin for a presumed urinary tract infection was commenced.