Serum Voriconazole Levels following Administration via Percutaneous Jejunostomy Tube

Candida glabrata causes approximately 5 to 15% of non-*albicans Candida* infections (2). Amphotericin B or high doses of fluconazole have been the "gold standard" for management of all systemic yeast infections (2, 5, 9). Voriconazole, a new triazole antifungal drug, has lower MICs than fluconazole and itraconazole for *C. glabrata* (1, 4, 5). We describe a case in which a patient with infection due to *C. glabrata* was successfully treated with the oral formulation of voriconazole delivered by jejunostomy tube.

A 66-year-old man was admitted with cervical pain and fever. Three months before, he had been treated for esophageal carcinoma with preoperative chemoradiation therapy and surgery. Six blood cultures yielded *Streptococcus constellatus*. A cervicomedial CT scan showed an esophagogastric fistula, and magnetic resonance imaging revealed C5-C7 spondylitis with an epidural abscess. A C5-C6 partial vertebrectomy was performed, and intraoperative cultures yielded *Escherichia coli*, *Streptococcus* species, *Moraxella catarrhalis*, *Haemophilus influenzae*, and *C. glabrata*. The patient was treated with systemic antibiotics, intravenous amphotericin B, laryngopharyngectomy, and mediastinal drainage. In addition, a jejunostomy tube was inserted under fluoroscopic control. Fourteen days later, the antifungal regimen was changed to voriconazole plus flucytosine. Voriconazole tablets (4 mg/kg twice daily for a body weight of 70 kg) were crushed, suspended in 50 ml of water, and delivered by jejunostomy tube. Blood drug levels were measured by solid-phase extraction followed by reversed liquid phase chromatography with UV detection. Peak serum drug concentrations were 2.5, 2.55, and 2.6 mg/liter and trough serum drug concentrations were 1.7, 1.75, and 1.4 mg/liter on days 2, 8, and 28, respectively. These values are similar to those reported after oral administration (8). No side effects or recurrence of the fungal infection was observed during follow-up. Unfortunately, the patient died from a fistula situated between the trachea and the gastroplasty 30 days after the beginning of therapy and leading to ineffective mechanic ventilation.

Voriconazole may be an alternative for treatment of *C. glabrata* infections because of its greater in vitro and in vivo activity, fewer adverse effects, and high oral bioavailability (5–7). Although percutaneous jejunostomy tubes may be used for enteral nutrition or for administration of drugs after gastrointestinal surgery or during the course of cervical neoplasm growth, altered pharmacokinetics have been described for antimicrobial drugs administered by jejunostomy (3). In the case described in this report, this mode of administration was associated with adequate levels of voriconazole in plasma and successful infection control.

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