Fidaxomicin Appears Promising for *C. difficile*

BY DOUG BRUNK

SAN FRANCISCO — Patients with *Clostridium difficile* infection who were treated with the novel macrocylic antibiotic fidaxomicin had a 45% lower rate of recurrence compared with those who were treated with vancomycin.

"It's encouraging because fidaxomicin is an easier drug to take compared with the current therapies," Dr. Yoav Golan said in an interview during a poster session at the annual meeting of the Interscience Conference on Antimicrobial Agents and Chemotherapy. "It's only twice a day dosing versus 3 and 4 times a day for metronidazole and vancomycin. Also, it seems to have a much smaller impact on emergence of resistance among gut pathogens. This was shown previously."

The analysis involved 432 patients enrolled in a multicenter, randomized trial to compare the safety and efficacy of fidaxomicin, 200 mg every 12 hours, with vancomycin, 125 mg every 6 hours for 10 days, in patients with *C. difficile* infection.

Fidaxomicin (Dificid) is a minimally absorbed, narrow spectrum antibiotic with limited impact on gut flora. It has been developed by Optimer Pharmaceuticals Inc., San Diego, Calif., which sponsored the trial. Dr. Golan disclosed that his relationship with Optimer Pharmaceuticals is limited to functioning as an investigator in the fidaxomicin clinical trials.

The drug has not been approved for use in the United States. Dr. Pamela Sears, executive director of biology and preclinical trials at Optimer Pharmaceuticals, anticipates that company will file for new drug approval with the FDA by early 2011.

For the study, Dr. Golan and his associates analyzed the rate of recurrent *C. difficile* infection among 221 patients in the vancomycin group and 211 patients in the fidaxomicin group. This was defined as recurrence of diarrhea and positive toxin within 4 weeks after the end of therapy. The mean age of patients was 62 years.

The recurrence rate was 13% in the fidaxomicin group, compared with 24% in the vancomycin group.

DR. GOLAN

The researchers reported that of the 432 patients, 81 (19%) had a recurrence of *C. difficile* infection. The overall recurrence rate was significantly lower among patients in the fidaxomicin group compared with those in the vancomycin group (13% vs. 24%, respectively). This translated into a relative reduction of 45% in the fidaxomicin group compared with the vancomycin group.

Rates of recurrence were highest in patients aged 75 years and older (31%) and in those aged 65-74 years of age (18%), and in those who were hospitalized (22% vs. 15% in outpatients).

Of the 81 patients with recurrent *C. difficile* infection, recurrence developed later among patients who took fidaxomicin. For example, 25% of patients in the fidaxomicin group developed recurrence within 10 days after initial treatment completion compared with 57% of patients in the vancomycin group, while 36% of patients in the fidaxomicin group developed recurrence within 21-30 days after initial treatment completion compared with 15% of patients in the vancomycin group.

The researchers also reported that the recurrence rate was significantly lower for patients in the fidaxomicin group who had not received any *C. difficile* infection–active antibiotics 24 hours prior to study enrollment (11%, compared with a rate of 24% for their counterparts in the vancomycin group). This finding suggests the potential for a high clinical benefit for fidaxomicin when being used as a first-line therapy, said Dr. Golan, assistant professor of medicine at Tufts Medical Center, Boston.

"The future for treating *C. diff.* is [to use] very narrow spectrum antibiotics compared to the very broad spectrum antibiotics we've been using," he concluded. ■