Mafenide Tied to Fungal Infections in Burn Patients

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CHICAGO — The use of topical mafenide acetate on burn wounds was associated with a higher incidence of fungal infection than was silver sulfadiazine in a retrospective analysis of 111 patients.

The chart review was initiated after physicians at the regional burn center of Miami Valley Hospital, Dayton, Ohio, observed more fungal infections after replacing the application of saline soaks for 24 hours followed by silver sulfadiazine 1% cream (Silvadene) with only the application of mafenide acetate 5% solution (Sulfamylon) as the topical antibiotic of choice for initial antimicrobial therapy.

The change in burn wound treatment protocol was made in 2002 in an effort to improve patient outcomes, and has since been reversed, according to research coordinator Ryan Shapiro, on behalf principal investigator Dr. R. Michael Johnson, at the annual meeting of the American Burn Association.

From 1998 to 2006, 42 patients were treated twice daily with silver sulfadiazine, and 69 with mafenide acetate solution. The silver sulfadiazine group was significantly younger than the mafenide acetate group (mean age, 38 vs. 48 years), less likely to have a central line (16 vs. 43 patients), and more likely to have shorter ICU stays (4 vs. 10 days) and shorter total hospital stays (23.5 vs. 34 days).

Nonsignificant differences between the silver sulfadiazine and mafenide acetate groups included mean total body surface area burned (27% vs. 29%), inhalation injury (14 vs. 25 patients), and mortality (6 vs. 13 patients).

Univariate analysis showed that patients receiving mafenide acetate solution had twice the rate of burn infection or systemic fungal infection (48%) than did patients receiving silver sulfadiazine (24%), reported the investigators, who disclosed no relevant conflicts of interest.

Patients receiving mafenide acetate also had four times the rate of systemic fungal infections (27.5%) than did patients receiving silver sulfadiazine (7%). Both outcomes were statistically significant.

Significant predictors of fungal infection on univariate analysis included age, length of ICU stay, total length of stay, presence of a central line, and use of mafenide acetate.

However, in multivariate logistic regression analysis, only length of ICU stay and total length of stay remained as independent predictors of fungal infection, according to Dr. Johnson, chief of plastic surgery at Miami Valley Hospital, and colleagues.

The overall higher fungal infection rate in the series was higher than expected, and could be the result of an increase in the age of patients being treated rather than the choice of topical antibiotic, the investigators noted.

Although the protocol was changed back to using silver sulfadiazine cream in 2006, mafenide acetate is still used in the burn unit at the physician's discretion, they indicated.

Audience member Dr. Debra A. Reilly, director of the burn center and a surgeon at the University of Nebraska Medical Center in Omaha, recounted similar problems with mafenide acetate and fungal infections, but cautioned the audience not to discard the drug, calling it a "very useful product" with a long track record.

Dr. Reilly suggested adding the antifungal nystatin, with the caveat that it must be combined with mafenide acetate suspension and not mafenide acetate solution. ■