

# Autologous Stem Cells Used to Treat Incontinence

BY KATE JOHNSON  
Montreal Bureau

CHICAGO — Autologous stem cells injected into the female urethra and urethral sphincter can stop urinary leakage for up to 2 years, according to new research.

The novel, minimally invasive approach, essentially "reconstructs" the lower urinary tract, said Ferdinand Frauscher, M.D., head of uro-radiology at Innsbruck (Austria) University Hospital.

"We believe we have developed a long-lasting and effective treatment that is especially promising, because it is generated from the patient's own body," he said at the annual meeting of the Radiological Society of North America.

Dr. Frauscher's team treated a cohort of 20 women, aged 36-84 years, who had minor to severe stress urinary incontinence. At 1 year post procedure, 18 (90%) remained continent, with 1 patient maintaining continence for a little more than 2 years, he said.

The technique involves obtaining muscle and connective tissue stem cells from a biopsy of the patient's arm and then culturing them for 6 weeks to yield roughly 50

million myoblasts and 50 million fibroblasts.

In a 15- to 20-minute outpatient procedure, the patient is given local or general anesthesia, and the myoblasts are injected directly into the urethral sphincter. The fibroblasts are first mixed with collagen and then injected into the urethral submucosa.

"We used transurethral three-dimensional ultrasound guidance for the procedure," said Dr. Frauscher. "With real-time ultrasound, we were able to see exactly where [to place] the new cells."

Many of the patients regained continence within 24 hours of the procedure.

"During the first days after the procedure, there is a bulking effect from the injection of the fibroblasts, which stay in place because they are mixed with collagen. But after that, the myoblast cells reproduce quickly to form new muscle tissue," said Dr. Frauscher, also of the department of radiology at the Medical University of Innsbruck.

Endoluminal ultrasound showed a dou-

bling of urethral and sphincter muscle thickness within 1 month of the procedure, while contractility of the sphincter muscle also increased, he said.

Of the two patients who did not regain continence, one improved. The other patient, aged 84, experienced no change.

In elderly women, cell reproduction may be less efficient, and it may be necessary to culture as many as 70 million cells, rather than 50 million, for transplant Dr. Frauscher said. ■

## Contaminated Food at Issue in Resistant UTI

Urinary tract infections caused by drug-resistant *Escherichia coli* may have an animal origin, Meena Ramchandani, M.D., of the University of California, Berkeley, and colleagues reported.

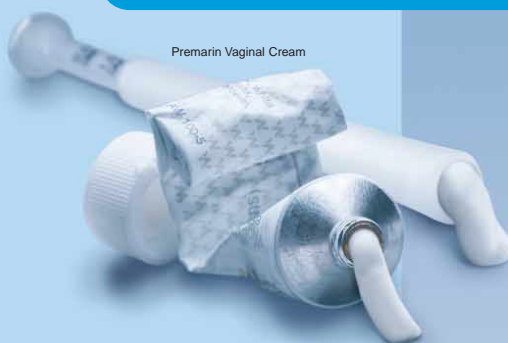
A number of cases across the United States caused by a trimethoprim-sulfamethoxazole (TMP-SMZ)-resistant *E. coli* strain belonging to a single clonal group sparked concerns about a possible association with contaminated food products. An investigation of 495 animal isolates showed that 128 had an electrophoretic pattern indistinguishable from that of the resistant strain in humans, and 14 of those were TMP-SMZ resistant. One, from a cow, was 94% similar to the pattern of a uropathogenic *E. coli* strain recovered from a human patient (Clin. Infect. Dis. 2005;40:251-7).

The possibility that contaminated food products are the source of drug-resistant UTIs has serious public health implications, the investigators concluded, noting that the introduction of the clonal group *E. coli* strain in this study doubled the prevalence of TMP-SMZ-resistant UTIs in one community.

However, in an editorial, Thomas Hooten, M.D., and Mansour Samadpour, M.D., of the University of Washington, Seattle, said that although they agree with the basic premise of the article, the findings do not convince them of a link between the animal- and human-associated resistant *E. coli* strains. The study fails to provide clear epidemiologic linkage between the strains, they noted (Clin. Infect. Dis. 2005;40:258-9).

—Sharon Worcester

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