# *Frozen Glove Found to Prevent Docetaxel-Induced Onycholysis*

BY BRUCE JANCIN

SAN ANTONIO — Having breast cancer patients don a pair of flexible frozen gloves during infusion of docetaxel markedly reduced the chemotherapy-induced fingernail toxicity known as onycholysis in a phase II multicenter Japanese trial.

This nail finding confirms an earlier French report, but the Japanese team was unable to confirm another French finding that these same frozen gloves also prevent docetaxel (Taxotere)-induced skin toxicity (J. Clin. Oncol. 2005;23:4424-9), Dr. Takahiro Nakayama said at the San Antonio Breast Cancer Symposium.

The Elasto-Gel frozen gloves, which look like cobalt-blue bulbous mittens or boxing gloves, contain a glycerin-based gel that remains soft at low temperatures. The reusable gloves, made by Southwest Technologies Inc., of Kansas City, Mo., are charged up by being placed in a subzero freezer for several hours. They contain an inner disposable liner that prevents direct skin contact with the icy material.

Recently a group at Georges Pomidou European Hospital in Paris reported in a phase II case-control study that an Elasto-Gel frozen sock significantly reduced docetaxel-induced toenail onycholysis but not cutaneous toxicity (Cancer 2008;112:1625-31).

Dr. Nakayama, a breast surgeon at Osaka University, Japan, reported on a comparative trial involving 70 breast cancer patients who used the frozen gloves and 52 others who were not offered them. The gloves are worn for 90 minutes, beginning 15 minutes prior to a 60-minute infusion of docetaxel. Because the gloves tended to warm up beyond the critical 0-degree Celsius threshold too quickly, investigators had subjects swap them for a fresh pair midway through the treatment session.

The mechanism of benefit is thought to involve reduced blood flow to the nail, Dr. Nakayama said in an interview.

No onycholysis occurred in 41% of the gloved group compared with 8% of controls. Rates of grades 1-3 fingernail damage as defined in National Cancer Institute Common Toxicity Criteria were significantly lower in the gloved patients.

However, rates of skin toxicity—rash, peeling, induration, fibrosis, hyperpigmentation, or hand-foot syndrome—did not differ significantly between the two groups. One-third of the gloved patients had no skin changes, as did 44% of controls. Half of the gloved group experienced grade 1 skin toxicity, compared with 42% of controls. Grade 2 toxicity occurred in 17% of gloved patients, while grade 2/3 toxicity was noted in 14% of controls.

Dr. Nakayama said he and his coinvestigators have concluded that the frozen gloves, with their lack of side effects, are a useful advance in supportive care and merit inclusion in routine clinical practice. "We use this in the clinic now on a daily basis," the surgeon added.

He contends, however, that the design can be improved upon, and has partnered with a Japanese manufacturer in developing a more efficient glove. They also plan to develop a frozen sock.

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