

Does Tamoxifen Improve Endothelial Function?

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Chronic tamoxifen therapy improves impaired endothelial function in postmenopausal women with breast cancer, a study has found.

“Endothelial function precedes atherosclerosis,” Dr. Benjamin Chow, University of Ottawa Heart Institute reported at the 52nd annual meeting of the Canadian Cardiovascular Society in Quebec City. “And since estrogens have been shown to improve endothelial function, and tamoxifen is a partial estrogen receptor agonist, we wondered if tamoxifen also exerted benefits on the endothelial function.”

Estrogens play a protective role and reverse endothelial dysfunction, which appears in women at the age of menopause. Tamoxifen, a nonsteroidal partial estrogen agonist and antagonist, is used in the treatment of breast cancer and has been associated with decreased cardiac events. Investigators recruited 12 postmenopausal women who had been diagnosed with breast cancer and who were eligible for tamoxifen therapy. Patients with hormonal imbalance or liver disease were excluded.

Patients underwent an acute placebo-controlled randomized cross-over evaluation, followed by a three month open label trial with a tamoxifen 20 mg. Endothelial function was assessed four hours after medication. High resolution brachial artery ultrasound was used to assess endothelial function, at rest and following hyperemia and nitroglycerin. There was a minimum three-day washout period between either medication, tamoxifen or placebo.

Flow-dependent vasodilation acutely did not differ after placebo versus tamoxifen (7.7 +/-1.2% and 7.9+/-0.9% respectively). However, chronic therapy was associated with a significant improvement in flow-dependent vasodilation (9.4+/-1.4%).

“There was no significant difference for postmenopausal women without coronary artery disease risk factors with breast cancer, and postmenopausal women without coronary artery disease without breast cancer,” Dr. Chow said. However, “there was a significant difference with chronic tamoxifen therapy with placebo.”