Beta-blockers and breast cancer survival: An unexpected correlation

By ACSH Staff — June 2, 2011

Two preliminary studies published in the *Journal of Clinical Oncology* suggest [1] that common blood pressure drugs known as beta-blockers may increase survival in women with breast cancer, or make it less likely that they develop aggressive breast cancer or die from it.

In the first study, Dr. Amal Melhem-Bertrandt and her colleagues from the M.D. Anderson Cancer Center in Houston looked at the medical records of about 1,400 women treated for breast cancer with surgery and chemotherapy. Of these, 7 percent (102) were already taking beta-blockers. After three years, 87 percent of the women taking these drugs were alive and cancer-free, compared to 77 percent of women not taking the medications. After taking into account other factors, such as their age, cancer stage, and diabetes, the findings were even more pronounced for women with “triple-negative” breast cancer — the hardest to treat.

In the second study, Dr. Thomas Barron and colleagues from the Trinity Center for Health Sciences in Dublin, Ireland, found that after five years, approximately 9 percent of women taking the beta-blocker propranolol died of breast cancer, compared to 27 percent of women not on the drug. The same effect was not found for another beta-blocker, atenolol, which seemingly contradicts Dr. Melhem-Bertrandt’s findings, but also indicates that not all beta-blockers operate in a similar fashion.

ACSH’s Dr. Josh Bloom finds these differences plausible. “There are two types of beta-blockers: selective (propranolol) and non-selective (atenolol). The fact that only the non-selective drug is effective does not necessarily indicate an inconsistency in the two studies. In fact, these differences may offer some insight into the mechanism by which these drugs are working in this particular instance.”

The researchers hypothesize that the beta-blockers are effective in staving off cancer due to their ability to curb the effect of stress hormones such as adrenaline and noradrenaline. They caution, however, that their results suggest merely an association and not a cause-and-effect relationship between breast cancer and beta-blockers.

“These drugs are a fairly common class of therapeutics prescribed to treat hypertension and other heart problems, such as arrhythmias and congestive heart failure,” says ACSH's Dr. Gilbert Ross, “but more research needs to be conducted in order to clearly demonstrate whether beta-blockers, which are not without their own side effects, have a beneficial impact on breast cancer.”