Low beta blocker dose can put patients at risk for subsequent heart attacks

October 14 2010

For nearly 40 years a class of drugs known as beta blockers have been proven to increase patients' survival prospects following a heart attack by decreasing the cardiac workload and oxygen demand on the heart. In a breakthrough study released in the *American Heart Journal*, Northwestern Medicine cardiologist Jeffrey J. Goldberger found the majority of patients are frequently not receiving a large enough dose of these drugs, which can put their recovery from heart attacks and overall health into peril.

"Only 46% of patients studied were taking 50% or more of the target dose of beta blockers shown to be beneficial in clinical trials," said Goldberger, director of cardiac electrophysiology research for the Bluhm Cardiovascular Institute of Northwestern Memorial Hospital and a professor of medicine at Northwestern University Feinberg School of Medicine. "Furthermore, 76% of patients were still being treated with the same amount of medication given at discharge. This means that for the vast majority of patients, there wasn't even an attempt to increase their dose."

Goldberger added that patients not getting the right amount of beta blockers is a problem nationwide. "Beta blockers work to keep patients alive after a heart attack, so proper dosing of beta blockers can save many lives," said Goldberger.

Northwestern Memorial was one of 19 sites that participated in the PACEmaker and Beta-blocker Therapy Post-Myocardial Infarction

(PACEMI) Trial Registry. Nearly 2,000 patients, who had been treated for a heart attack, were enrolled across the sites.

Study participants were prescribed very low doses at discharge, in part to assess how their bodies were likely to react to the drug. Researchers then followed up with patients three weeks later to determine if their personal physicians had adjusted the dosage amount.

"One of the reasons for the low dosage at discharge from the hospital can be attributed to patients' shorter length of hospital stay," said Goldberger. "Better communication between patients and their personal physicians would help ensure patients are receiving the appropriate dose of beta blockers more quickly. Patients can be in and out of the hospital within two days after a heart attack, and this short amount of time doesn't allow for us to increase their medication to the target dose while they are still here."

Goldberger added that there is not yet a system in place for what should happen as an outpatient that used to happen as an inpatient.

"Patients might see one doctor in the hospital but a different one in the office, and those two might not be conferring on the appropriate amount of beta blockers the patient should be taking," said Goldberger.

These findings make it clear, Goldberger added, that patients and their personal physicians need to work together and have better communication.

"Patients also need to schedule an initial doctor's appointment following their discharge within two weeks, so that doctors can adjust the amount of medication in a timely fashion," said Goldberger. "I would expect 70-80% of patients to achieve 50% or more of the target dose."

Provided by Northwestern Memorial Hospital