SOUTHWESTERN NEWS

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SELECTIVE AND NONSELECTIVE BETA-BLOCKERS EQUALLY EFFECTIVE IN PREVENTING SUDDEN DEATH

DALLAS- September 2, 1999-A new study from UT Southwestern Medical Center at Dallas should encourage cardiologists to prescribe either selective or nonselective beta-blockers to patients with congestive heart failure. Researchers found both types of drugs equally effective in reducing the risk of sudden death.

In a study of 26 patients with congestive heart failure, researchers from UT Southwestern and Dallas Veterans Affairs Medical Center found no difference in the reduction of QTc dispersion -- a marker of risk for sudden death -- between those treated with selective beta-blockers and those treated with nonselective beta-blockers. Their findings were published in the August issue of *The American Journal of Cardiology*.

The scientists compared the electrocardiograms (ECG) of the patients before and after three months of therapy with either a selective beta-blocker, which inhibits the beta 1 receptor, or a nonselective beta-blocker, which inhibits both the beta 1 and the beta 2 receptors.

Congestive heart failure kills more than 43,000 people in the United States annually. A number of recent studies have shown that physicians underprescribe beta-blockers because of their side effects despite clinical-trial reports that congestive-heart-failure patients who take them are 43 percent less likely to die during the first two years following a first heart attack than those who do not take them. Side effects may include depression, worsening asthma, tiredness and sexual dysfunction, although many physicians note that the heart attack itself may produce these.

"This is significant because it gives us a better idea of how effective different beta-blockers are in treating congestive heart failure," said Dr. Eric Eichhorn, UT Southwestern professor of internal medicine and director of the cardiac catheterization laboratory at the VA Medical Center. "The findings give doctors more options in treating their patients and help us as we move into development of the next generation of these drugs."

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The selective beta-blocker used was metoprolol. The nonselective drugs were carvedilol and bucindolol. The scientists found that all the patients had approximately the same reduction in QTc dispersion. The QT interval is the time between the Q and T peaks on an ECG. QTc dispersion is the maximal difference between the shortest and longest QT. When the difference is shortened, it shows the drug has improved the health of the heart and reduced the risk of sudden death.

Beta-blockers are designed to impede the action of a cellular protein called a beta receptor. It is part of a biochemical process that regulates the heart. The receptor inhibition by the drug blocks the toxic effects of the sympathetic nervous system on the heart. Both the selective and nonselective beta-blockers used in this study appeared to alter ventricular function of the heart.

The other researchers involved in this study were UT Southwestern medical resident Dr. Susan Fesmire; VA research nurse Lucille Marcoux; research assistants Debra Lyyski and Michael Sprague; and Dr. Harold Kennedy, a professor of medicine at the University of Minnesota Medical School – Minneapolis.

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