NEW TREATMENTS FOR HEART FAILURE IN BLACK PEOPLE

ADJUNCTIVE SYMPATHOPLEGIC THERAPY TO ACE INHIBITION IN BLACKS WITH CONGESTIVE HEART FAILURE: A COMPARISON OF ALPHA-$_1$ WITH BETA-$_1$ BLOCKADE ON EXERCISE TOLERANCE AND CARDIAC SYMPATHOVAGAL REFLEX ACTIVITY

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Heart failure, known by extreme tiredness, breathlessness, and body swelling, is a leading cause of death, hospitalization, and healthcare cost, worldwide. The risk of death from heart failure is higher than that of most cancers! Hypertension (high blood pressure) and heart attacks are among the leading causes of heart failure. Unfortunately, heart failure appears to be more common and progresses more quickly in Black people, both in the Americas and in Africa, than in the general population.

Researchers have found that some heart medications are more effective in Whites than in Blacks with heart failure. Although one class of drugs, angiotensin converting enzyme inhibitors (ACEI), have been found to reduce the death rate and duration of hospitalization from heart failure in Black Africans or Black Americans, many patients still suffer or die. In this study, the authors set out to evaluate if an additional class of drugs would help to prevent heart failure in Blacks.

Twenty-eight heart failure patients agreed to participate and were divided into three groups. One group received their usual medications of diuretics (water pill), digoxin, and the ACE inhibitor, enalapril. The second group received what the first group received, but in addition, received a beta-1 blocker medication named atenolol. A third group received what the first group received together with another heart drug, an alpha-1 blocker called prazosin.

The patients were evaluated at the beginning and again after four weeks of the respective treatments. Each patient completed tests to determine how far they could walk before getting tired or becoming breathless, and tests showing heart function, including how well the brain regulated the heart rate and the heart's response to a handgrip exercise. The patients were compared to a group of healthy people of the same age and sex.

All patients showed improvements in all the tests at the end of four weeks. However, the patients who received additional treatment with atenolol, the beta-$_1$ blocker, had the greatest improvement in exercise tests and heart function. They also had the most improvements in the heart rate response, which indicates that their brains were now able to regulate their heart beats in a way no longer different than the health people in the control group. Patients taking prazosin performed better in the handgrip exercise than the other two groups.

Studies demonstrating the use of beta blockers in Blacks with heart failure have had confusing results. This current study shows that not all beta blockers are the same. Atenolol, which blocks some beta-1 receptors, but not all of the heart's beta receptors, has the ability to return heart function to normal in Black patient's with heart failure. However, Blacks appear to need a level of beta-receptor activity and/or blockade of the alpha-1 receptors (which prazosin does) for the best treatment of heart failure.

With these novel findings, we now have a better understanding of which types of additional medications (especially beta-blockers) will be more beneficial in reducing tiredness, breathlessness, and abnormal heart beats in Black people with heart failure. More research will be needed, however, as a large-scale study, to find out the impact of these additional treatments in preventing deaths and hospitalization in Blacks with heart failure.