^{123}I-meta-iodobenylguanidine for all heart failure patients!

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In patients with heart failure (HF), increased sympathetic activity and cardiac sympathetic dysfunction are present and are related to an unfavorable outcome. In recent years, large scale clinical trials have documented the benefits of pharmacological therapies aimed at limiting left ventricular remodeling. These beneficial effects were associated with an increase in myocardial uptake of ^{123}I-metaiodobenzylguanidine (^{123}I-MIBG), a radio-labeled norepinephrine analog. A large number of investigators have demonstrated decreased myocardial ^{123}I-MIBG uptake in patients with HF and have shown that those patients with the lowest uptake tend to have the poorest prognosis.

In addition to the morbidity and mortality associated with ventricular dysfunction, there is also an increased incidence of sudden cardiac death (SCD) in HF patients. Especially patients with severely reduced left ventricular ejection fraction (LVEF) (<30-35%) are at risk. Although therapies for HF have been successful in reducing morbidity and mortality, in recent years there has been rapid increase in the use of implantable cardioverter-defibrillators (ICD) as primary treatment for this condition. This development in therapeutic strategy has had an increasing impact on healthcare budgets in the USA and Europe and has stimulated interest in diagnostic tests capable of predicting future risk for heart failure progression and arrhythmic SCD.

The increased cardiac sympathetic activity, often present in patients with HF, may play a role in the development of ventricular arrhythmias. High sympathetic activity has been demonstrated in HF patients with ventricular arrhythmias. On the other hand, β-receptor antagonists have shown to reduce the incidence of ventricular arrhythmias in CHF patients. Therefore, cardiac sympathetic nervous function and activity may serve as parameters that can be used to identify HF patients who are at risk for life-threatening arrhythmias. Some clinical studies have already shown that cardiac sympathetic activity as assessed by the use of ^{123}I-MIBG scintigraphy in combination with other clinical parameters is related to SCD and appropriate ICD discharge. If these findings are confirmed by larger studies, ^{123}I-MIBG might become an important tool to select HF patients for ICD.

Sympathetic myocardial activity as assessed with ^{123}I-MIBG has powerful prognostic value in heart failure patients. Those patients with HF with the lowest myocardial ^{123}I-MIBG uptake tend to have the poorest prognosis. However, additional studies will be needed to determine whether ^{123}I-MIBG can assist in triage of patients being considered for ICD placement.