画像検査により心不全のリスクが見極められる

ADMIRE-HF：新たな核医学検査は心不全患者のリスクを定義付けるのに役立つ

ADMIRE-HF: New nuclear imaging test helps define risk in patients with heart failure

心臓の交感神経の整合性を評価する簡単な核医学検査である心筋シンチグラフィにより予後が不良と考えられる患者を見極めることができるとのADMIRE-HFの結果が2009年第58回American College of Cardiology学会で発表された。この検査は交感神経に取り込まれるノルエピネフリンの生理的アナログである123Iメタヨードベンジルグアニジン（123ImIBG）を 放射性トレーサーとして用いる。日本およびヨーロッパのスタディの結果、123ImIBGの取り込みが少ないと予後不良であることが示された。このトライアルではクラスIIおよびIIIの心不全患者964人に123ImIBGを静脈内注射し核画像検査を施行した。約4分の1の患者（238人）が平均18ヵ月の経過観察期間中に主要な心イベントを来たした。2年間の無病生存率はH/M（心臓／縦隔比：健康人のH/M比は約2）≥1.60の患者で85%であり、H/M比<1.60の患者では63%であった。H/M比が低い群では心臓死が51人に認められたのに対し、H/M比が高い群では2人であり、2年にわたる心臓死に関してH/M比が高いことによる陰性的中率は98.8%であった。

Full Text

A simple nuclear imaging test called myocardial scintigraphy can evaluate the integrity of the sympathetic nerves in the hearts of patients with Class II and III heart failure, according to research presented at the American College of Cardiology's 58th scientific session.

"The Prognostic Significance of 123I-mIBG Myocardial Scintigraphy in Heart Failure Patients: Results From the Prospective Multicenter International ADMIRE-HF Trial" employs myocardial scintigraphy, which enables doctors to examine heart functions at the cellular level to determine if those functions are working properly. Cellular malfunction results in patients at higher risk for deterioration of the heart's pumping ability and possibly even death.

"ADMIRE-HF allows us to get a better understanding and gives us a qualitative measurement of what's happening at the molecular level in the nerves of the heart, which cannot be seen on tests such as echocardiograms and x-rays," said Arnold F. Jacobson, M.D., Ph.D., Head of the Cardiac Center of Excellence, GE Healthcare.

ADMIRE-HF is the integration of two multicenter international Phase 3 trials designed to show the prognostic value of scintigraphy with the norepinephrine analog 123I-mIBG (AdreView) as a risk indicator for major cardiac events among 964 patients with heart failure. The composite endpoint was the time to the first occurrence of NYHA (New York Heart Association) heart failure class progression, potentially life-threatening arrhythmic event, or cardiac death, as determined by an independent adjudication panel. Patients were followed for a maximum of two years.

Roughly one-quarter (238) of the patients experienced major adverse cardiac events during a mean follow-up of 18 months; first events were heart failure progression in 163 subjects, arrhythmic events in 51 and 24 cardiac deaths. An additional 29 cardiac deaths occurred as later events. Two year event-free survival was 85 percent in patients with H/M ≥1.60 (heart/mediastinum ratio) compared with 63 percent for those with H/M <1.60. Fifty-one cardiac deaths occurred in the low H/M group compared to two in the high H/M group and the negative predictive value of a high H/M for cardiac death over two years was 98.8 percent.

The test is easily performed with an IV injection of a radioactive tracer, which enables images of the heart to be taken over several hours using a nuclear medicine imaging device. The tracer is safe, with radiation exposure similar to other nuclear medicine procedures. The agent has been in clinical use for more than 20 years in Japan, Europe and the United States with very few adverse reactions reported.

While the test itself has no effect on the patient's condition, the information it provides may contribute to the development of a more effective management strategy.

"The use of the imaging test is consistent with the current trend toward gaining better and earlier understanding of heart disease at a molecular level in order to institute more effective prevention and management strategies," Jacobson said. "We've known about this testing method for years, but ADMIRE-HF is the first large-scale multicenter prospective validation of its prognostic power and provides data that clinicians may be able to use to improve current practice.

Admire-HF is still investigational in nature and any clinical application of the results will only be possible once the FDA approves the agent for a cardiac indication.