



Cardiac PET imaging increases CAD detection



New research shows that patients who receive cardiac positron emission testing (PET) imaging instead of single photon emission computed tomography (SPECT) scan experienced a significant increase in the detection of severe obstructive coronary artery disease (CAD). The use of PET scans resulted in increased rates of CAD diagnosis from 70 percent to 79 percent, according to the study presented at the American College of Cardiology Scientific Session in Orlando, FL.

"The benefit of the study is that it helps us better identify a patient's risk for adverse events affecting the heart and their need for further care," said lead author David Min, MD, a cardiologist specialising in cardiac imaging at the Intermountain Medical Center Heart Institute in Salt Lake City.

Both PET and SPECT scans are nuclear imaging techniques that provide metabolic and functional information of the heart. PET scans provide better image resolution and quality, but have not yet gotten widespread adaptation compared to SPECT. The study is one of the largest of its kind involving PET patients.

For the study, Dr. Min and colleagues examined Intermountain Healthcare's Enterprise Data Warehouse, which is one of the nation's largest depositories of clinical data, and identified 3,394 patients who underwent a pharmacologic SPECT from 2011-2012 and 7,478 patients who underwent PET in 2014-2015 at Intermountain Medical Center. The average age of the patients was 65 years, and 47 percent of patients were female. The researchers looked at pharmacologic SPECT so the comparison with PET scans was more accurate.

Aside from increasing the detection of CAD, PET scans also were associated with a lower incidence of invasive catheterisation without identification of severe coronary artery disease (43% vs. 55% for SPECT scans).

Overall, PET more successfully identified patients with severe obstructive CAD and need for revascularisation; compared to SPECT, PET scans increased true positives and reduced false positives for severe coronary artery disease.

Intermountain Medical Center made the switch from SPECT to PET in 2013, and the researchers sought to determine the impact of this change on clinical outcomes. "In order to understand the differences between the two-year period of SPECT utilisation immediately before the PET programme began and the two years after PET was fully implemented, we conducted a retrospective analysis of catheterisation outcomes 60 days after heart patients received various treatments."

Notably, the study also showed that PET was more effective in identifying patients with CAD who did not need

an invasive procedure.

The study's findings have "broad implications as physicians consider what test best serves their individual patients and institutions consider the advantages and disadvantages of SPECT and PET as well as downstream resource utilisation," Dr. Min explained.

Source: [Intermountain Medical Center](#)

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Published on : Tue, 13 Mar 2018