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Role of 99mTc-MIBI myocardial perfusion imaging in the diagnosis of coronary artery disease

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Myocardial perfusion imaging uses an intravenously administered radiopharmaceutical 99mTc-MIBI to depict the distribution of blood flow in the myocardium. Perfusion imaging is useful in identifying areas of relatively reduced myocardial blood flow associated with ischemia or scar. The relative regional distribution of perfusion can be assessed at rest, during cardiovascular stress, or both. Coronary artery disease is the leading cause of death worldwide, and its management is very expensive. Currently, use of dual head gamma camera, SPECT-CT modality in cardiac patients has been proven to be accurate and justified as it also provides added values with respect to prognostic, risk stratification, and cost parameters. CT is used for calcium scoring. The three-dimensional (3D) images produced in this study are called perfusion images as they indicate areas of the heart muscle that are perfused, or supplied, with blood. 99mTc-Sestamibi SPECT acquisition is initiated 30 minutes after isotope injection. During image interpretation, a semi-quantitative visual interpretation is performed in the apical, midventricular, and basal slices of the short-axis views and apical segments on the midventricular long-axis slice. Each segment has scored using a 5-point scoring system (0: Indicated normal; 1: Equivocal; 2: Moderate; 3: Severe reduction of radioisotope uptake; and 4: Absence of detectable tracer uptake in a segment). Stress/Rest MPI is the most accurate test available for the early diagnosis of coronary artery disease (CAD) in patients who may be at a risk of a heart attack. Abnormal perfusion scans are highly indicative of CAD. MPI show overall function of the heart walls and assess damaged heart muscle following a heart attack.

Biography

Karan Peepre has completed his MBBS, MD, DNM from The University of Jabalpur, University of Mumbai and Devi Ahilya University, Indore, India. He has been trained in Spect-CT,PET-CT, Nuclear Medicine, Nuclear Cardiology from AIIMS, New Delhi, Emory University, School of Medicine, Atlanta, USA and Nuclear Medicine Centre, BARC, TMC, Mumbai. Presently he is a Professor and Head of Department of Nuclear Medicine and Superintendent of Sultania Lady Hospital, Gandhi Medical College, Bhopal, India. He has presented many research papers & delivered lectures in national and international conferences and chaired scientific sessions. He has published more than 15 papers in reputed journals.

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