Update 2

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1 Introduction

Nuclear medicine is the branch of medicine that deals with the use of radioactive diagnosis and treatment. It is a branch of medical imaging that uses trace amount of radioactive to diagnose and determine the severity and treatment for many types of disease as in cancers, heart disease, gastro-intestinal, endocrine, neurological disorders other abnormalities inside the body.

Radionuclide are radioactive compounds that are given to patients physically, ingested, or inhaled. These radio detectors pass through the area being explored and emit gamma rays as energy. A specific camera called a gamma camera detects these gamma rays.

When a radionuclide is injected into the body, it is frequently chemically attached to a complex that acts as a carrier molecule. This allows us to track molecular activity throughout the body. This has the ability to detect disease early on as well as a patient's rapid reaction to therapeutic interventions. Coronary artery disease and cardiomyopathy are assessed by cardiac nuclear medicine imaging[3]. It can also be used to detect whether chemo or radiotherapy has caused harm to the heart. Small doses of radioactive elements called radio-tracers are injected into the circulation, breathed, or taken in nuclear medicine[1]. The radio-tracer passes through the area being examined and emits energy in the form of gamma rays, which are detected by a gamma camera and a computer, resulting in images of the inside of your body. Nuclear medicine imaging gives information that is often not available through other imaging techniques.

1.1 Some common uses of procedures[2]

• Nuclear medicine imaging of the cardiac is also done.
• A myocardial perfusion scan is being used to visualise circulatory patterns to the cardiac walls.
• To determine whether or not coronary artery disease is present and how serious it is.

• To detect the extent of heart damage after a heart attack, also known as a myocardial infarction.
• To analyze the effects of bypass surgery or other revascularization operations re - establishing the heart's blood circulation.
• A technique known as cardiac gating is used in connection with an electrocardiogram (ECG) to evaluate cardiac movement and overall heart function.