Dedications

To the soul of my father, who showed me in his life time the meaning of life
To my mother who showed me how to choose my way
To my sisters and brothers who made me proud
To my friends who supported me all the time
To my teachers who taught me every thing I know
ABSTRACT

In this experiment thirty-five patients were examined in order to measure the function of lung scan in detection of pulmonary embolism. And evaluate the value of radionuclide lung perfusion scan in cases of pulmonary embolism. And to define the role of TC99m-MAA in detection of pulmonary embolism. It is found that 20 cases (57.1%) out of 35 cases shows a normal lung perfusion scan while 15 cases (42.9) out of 35 shows low, medium and high probability of pulmonary embolism. The Tc99m-MAA is superior in pulmonary embolism detection than the other methods when it is used in combination with radioactive gases (Xe133) in ventilation lung scan.
الخلاصة

في هذه الدراسة تم إخضاع 35 مريض لفحص الرئة باستخدام خليط المادة المشعة والصيدلانيه تك99م-MAA (Tc99m-MAA) وذلك لقياس قدرة الفحص على تتبع الإصابه بالانسداد الرئوي.

وكان النتائج أن عشرون حالة تم تشخيصها أنها طبيعية 57.1% في حين أن 15 حالة سجلت احتمالية الإصابة تتراوح بين منخفض وموسط وعالي. من هنا نخلص إلى أن المادة المستخدمة للفحص (Tc99m-MAA) ذات كفاءة عالية في كشف الإصابة بالمرض أكثر من الطرق الأخرى المستخدمة.

وتزداد هذه الكفاءة عند مصاحبة فحص الرئة بالغازات المشعة مثل (Xe133). وذلك لرفع كفاءة التشخيص.
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LIST OF ABBREVIATIONS

A       Atmospheric pressure
CO2    Carbon dioxide
CT     Computed Tomography
DMSA   2,3-dimercaptosuccinic acid (using for renal static imaging)
DTPA   pentetate (used for renal dynamic imaging)
E       Elastic recoil pressure
ECG    Electrocardiogram
FRC    Functional residual capacity
GIT    Gastrointestinal tract
IAEA   International Atomic Energy Agency
MAA    macro aggregated albumin
MBq    mega becquerel (unit for measuring the radioactivity)
mCi    milli curie (unit for measuring the radioactivity)
Mo99   Molybdenum-99
Mo99O4 Molybdate
MRI    Magnetic Resonance Imaging
Na     Sodium
NaCl   Sodium Chloride
NaTc99mO4 Sodium Pertechnetate
PE     Pulmonary embolism
R      the pressure sure to overcome airway resistance
RIA    radioimmunoassay
RICK   Radiation and Isotopes Center of Khartoum
TC99m technetium 99 metastable
Tc99mO4 Pertechnetate
V/Q    Ventilation/Perfusion
WHO    World Health Organization
Xe133  Xenon133(radioactive gas)