

عنوان مقاله:

Determination of Uterus Absorbed Dose by Patients following Myocardial Perfusion Scan using TLD and Conjugate View Methods

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خلاصه مقاله:

Introduction: The determination of patient's absorbed dose is the first step of radiation protection which depends on the quantification of organ activity in nuclear medicine. The aim of the present study was to determine the absorbed dose by patient's uterus following myocardial perfusion scan with ^{99m}Tc -sestamibi using Thermoluminescence dosimetry (TLD) and conjugate-view methods. **Material and Method:** In this study, each patient was injected 15 to 20 mCi (based on their weight) of ^{99m}Tc -sestamibi. Myocardial perfusion scan from twenty two patients (females) were acquired by gamma camera at 15, 60 and 90 minutes after ^{99m}Tc -sestamibi injection. To determine the amount of activity in uterus, conjugate view method was applied on images. Then, MIRD equation was used to estimate absorbed dose in uterus of patients. Moreover, uterus absorbed dose was determined using TLD method. At the end, absorbed dose values obtained in conjugate view method were compared with the data obtained from TLD method. **Results:** The average amount of uptake for ^{99m}Tc -sestamibi by heart was calculated 3.077 ± 0.067 percent of injected dose. The uterus activity at the intervals of 15, 60 and 90 minutes after injection of ^{99m}Tc -sestamibi was 0.044 ± 0.015 , 0.031 ± 0.014 and 0.026 ± 0.013 mCi, respectively. The uterus absorbed dose per unit of injected activity ($\text{mGy/MBq} \times 10^{-4}$) obtained 5.258 ± 0.500 using TLD method. **Conclusion:** The results of this study were in good agreement with similar studies. Dosimetry using TLD, in comparison with the conjugate view method, demonstrates more accurate results

کلمات کلیدی:

Radionuclide Imaging, Myocardial Perfusion Imaging, Thermoluminescent Dosimetry, Uterus

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