

**International Conference on Occupational Radiation Protection:
Strengthening Radiation Protection of Workers –Twenty Years of Progress
and the Way Forward**

Contribution ID: 104

Type: **Poster**

Evaluation of Thyroid Exposure of Nuclear Medicine Staff Working with Radioiodine .

Problem:Iodine-131 (¹³¹I) is the most commonly used iodine radioisotope, and activities used are sometimes very high.

In solution iodine is volatile at room temperature; nuclear medicine personnels are thus exposed both to external irradiation risk of which is monitored by wearing a dosimeter and to internal contamination risk of induced by inhalation.

Objective:Evaluate the internal contamination by iodine 131 of nuclear medicine personnels.

Material and method:The I-131 content in the thyroid of staff members working with this radionuclide in the form of solution and capsion has been measured in one Department of Nuclear Medicine performing therapy and diagnosis of thyroid disease in Tunisia.

Measurements were performed with an NaI (TI) portable detection unit for in situ measurements of radioiodine.

We carried out 45 measurements; 15 from a control group and 30 carried out in two stages one month apart by the personnels

Results:¹³¹I was detected in thyroid for all the medical staff.

Counting rates varid from 88,14cps à 1105,77c/s cps.

The maximum values corresponded to persons most exposed to radiation exposure. Namely they were technicians who prepared and administered iodine to patients.

However, these values remain within the regulatory limits.

Values for control group were of the order of background noise around 90cps

Conclusion:Several methods and devices have been developed for in vivo measurements of ¹³¹I in the thyroid by using portable gamma detectors.

This method remains easy to apply thanks to simple, inexpensive equipment and generally available in the MN services.

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Session Classification: Session 8. Occupational radiation protection in medicine

Track Classification: 4. Occupational radiation protection in medicine