

# Iodine-131 Therapy Incident

**An incident report was reported to the Radiation Safety Program in which an activity of 150 MBq of iodine-131 was administered to a woman who subsequently discovered that she was pregnant. This incident has highlighted the need for nuclear medicine centres to have appropriate protocols in place for the treatment of females of child-bearing age with iodine-131. This circular has been prepared to alert centres to the issues and to make recommendations on appropriate protocols.**

## Background

The report stated that a woman of child-bearing age, who indicated that she could not be pregnant, was administered an activity of 150 MBq of iodine-131. One week later the woman returned a positive pregnancy test. The activity was administered so as to be able to determine if any thyroid tissue was missed, if there were any given following a thyroidectomy to determine if any metastases and to measure the percentage uptake. This information is used to choose the most appropriate therapeutic dose of iodine-131 for ablating the remaining thyroid tissue and the metastases. A pregnancy test was carried out prior to the proposed therapy dose. When this test was positive the therapy dose was not administered.

The Radiation Advisory Committee was informed of this incident and expressed concerns about the existing protocol for such procedures.

## Issues

It should be noted that the dose to the foetal thyroid for iodine-131 procedures, while it depends on the age of the foetus, can be as high as 100 Gy/100 MBq administered to the mother<sup>1</sup>. This is a thyroablative dose.

This high level of radiation dose justifies a need for obtaining corroborative evidence excluding pregnancy prior to administration of even relatively low activities of iodine-131.

To exclude pregnancy, the person administering the therapeutic radiopharmaceutical must verify the pregnancy status of all women of child bearing age with a  $\beta$ -HCG test. The test must be performed on the day of the treatment.

## Recommendation

The Committee recommended that all nuclear medicine centres review their protocols for iodine-131 therapy to ensure that this issue is managed appropriately.

## Reference

1. Berg GEB, Nystrom EH, Jacobsson L, Lindberg S et al. Radioiodine treatment of hyperthyroidism in a pregnant woman. *The Journal of Nuclear Medicine* 1998; **39(2)**: 357-361.

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