

REVIEWER'S REPORT

Manuscript No.: IJAR-58765

Title: Comparative dosimetric assessment of ambulatory and inpatient iodine 131 therapy using Monte Carlo simulations.

Recommendation:

- Accept as it is
 ✓ Accept after minor revision.....
 Accept after major revision
 Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance		✓		

Reviewer Name: Dr S. K. Nath

Detailed Reviewer's Report

Strength of the study:

- The topic is relevant to radiation safety and nuclear medicine practice.
- Monte Carlo simulation is appropriate for dosimetric assessment.
- Three clinically relevant activity levels are compared.
- Different exposure durations are evaluated systematically.
- Organ absorbed doses and effective doses are presented.
- The manuscript refers to ICRP, IAEA and EANM guidance.
- The study has potential practical value for radiation protection planning.

Weakness of the study:

- The methodology does not provide enough detail for reproducibility.
- Only a simplified adult male phantom is used.
- Real patient, staff and caregiver measurements are not included.
- Some reported dose values appear inconsistent within the tables.
- The interpretation of outpatient safety is not fully consistent with the stated release criteria.
- Ethical or regulatory approval is not reported.
- Grammar, formatting and scientific writing require substantial improvement.

Reviewers Comments:

The manuscript addresses an important topic in nuclear medicine and radiation protection and uses Monte Carlo simulation to compare external doses associated with different iodine 131 activities. The use of an anthropomorphic phantom and comparison of three activity levels are useful features. However, the methodology needs much clearer description, particularly regarding the simulation software, source modelling, validation, assumptions and dose calculation procedure. Since this is a simulation based study without human participants, formal ethical clearance may not be required, but the authors should clearly state this and mention any relevant institutional or regulatory review if applicable. There are also inconsistencies in the interpretation of the 3700 MBq scenario, where the reported dose rate exceeds the cited 30 μ Sv/h release criterion. Some numerical values in Table 3 also require verification. Overall writing quality need careful editing. The limitations of using a single adult male phantom should be discussed more clearly. Overall, the work has potential, but substantial revision is required.

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