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REVIEWER'S REPORT

Manuscript No.: IJAR-53915 Date: 19.09.25

Title: Survival and Pulmonary Toxicity in Non-Small Cell Lung Cancer : The Role of Pre-Treatment GTV Volume and Dosimetric parameters

Recommendation:

Accept as it is ..... **YES** ....
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: PROF DR DILLIP KUMAR MOHAPATRA **Date:**19.09.25

Reviewer's Comment for Publication.

(*To be published with the manuscript in the journal*)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewers name.

Detailed Reviewer's Report

The manuscript titled Survival and Pulmonary Toxicity in Non-Small Cell Lung Cancer: The Role of Pre-Treatment GTV Volume and Dosimetric Parameters addresses an important clinical question in the management of NSCLC, particularly in the context of radiotherapy planning.

Strengths

The study is well-structured with a clear objective and logical methodology.
Provides valuable regional data from Morocco, where such studies are scarce.
The evaluation of both survival and pulmonary toxicity outcomes adds clinical relevance.

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Dosimetric thresholds (MLD, V20, V30) are highlighted as predictors of acute pulmonary toxicity, which has practical implications for treatment planning.

Weaknesses

The retrospective, single-center design and relatively small sample size (n=65) limit the generalizability and statistical power.
The chosen GTV cutoff (100 cc) is not fully justified and may need stronger support from existing literature or ROC-based analysis.
The borderline survival difference (p=0.059) should be interpreted cautiously and not overstated.
No multivariate analysis was performed to account for potential confounders (e.g., smoking status, performance score, treatment regimen).
The discussion could be expanded to explain the observed toxicity trends and to compare findings more deeply with larger published series.

Significance

The work contributes to the understanding of prognostic and predictive factors in NSCLC radiotherapy and underlines the role of GTV and dosimetric parameters in clinical outcomes. While the study largely supports findings already reported in international literature, it adds a useful perspective from a resource-limited setting.

This is a well-structured and timely study with important implications for radiotherapy practice. It supports the prognostic value of GTV and reinforces the predictive role of dosimetric parameters for pulmonary toxicity. With revisions to clarify methodology, strengthen the discussion, and refine the interpretation of results, the manuscript could make a meaningful contribution to the literature.

Specific Suggestions

- Expand the **limitations section** to include:
  - Small sample size, retrospective design.
  - Heterogeneity of chemotherapy regimens.
  - Lack of performance status, comorbidity, and multivariate analysis.
  - Limited follow-up for chronic toxicity.

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- Clarify **toxicity results** with grade distribution.
- Provide stronger justification for the **100 cc GTV cutoff.**
- Reframe survival conclusions to avoid overstatement of borderline results.
- Polish the **references** for consistency (some citation numbers and formatting need correction).
- Improve figure/table readability (highlight significant p-values, ensure high resolution of Kaplan–Meier curves).