TEHRAN UNIVERSITY OF MEDICAL SCIENCES

22 April 2025

Dear Scientific Committee of SEFM,

It is with great honor that we reach out to you regarding an international project concerning "*Variability of Dose Prescription and Reporting in Stereotactic Radiation Therapy of Peripheral Non-Small Cell Lung Cancer: A Multicenter Registry-Based Retrospective Study on ICRU 91 Dose Coverage Parameters*".

Until now, SBRT leaders in Italy and Germany have agreed to participate in this study by distributing the registry data form to their community. Dr. Nuria Jornet and Dr. Diego Jurado Bruggeman collaborate with us from Spain in this study. Still, based on their recommendation, more Spanish institutions should be involved in the study through your scientific committee to minimize the possible bias in data collection. We are honored to invite the Spanish community to participate in this study and would appreciate it if your committee could distribute this invitation to your medical physics community. The Excel form for data registry and ethics certificate from the Tehran University of Medical Sciences (Tehran, Iran), where this study was initiated, is also attached to this letter. Participants will be appreciated by including their names in the list of authors of the paper. Up to 2 persons per institution (physicist or physician) can be involved in the study.

The main aim of this study is summarized below:

Although the ICRU 91 report [1] suggested meaningful parameters (HI, CI, and GI) for the evaluation of treatment plans in radiotherapy, the report does not refer to the potential clinical values for these parameters. In 2023, Das et al. [2] recently showed a significant variety in reporting HI, especially for SBRT lung patients, which needs to be specifically studied. Additionally, to the best of our knowledge, the association between these parameters and the density and size of PTV has not yet been investigated using clinical data. The variety in the usage of grid size, dose calculations algorithm, and isodose prescription for dose calculations has been seen in routine clinical discussions. Additionally, some TPSs use different formulas compared to the ICRU 91 report [1] for indexing HI, CI, and GI, which is challenging. This retrospective study aims to investigate the above issues via multi-center data collection on lung cancer patients undergoing SBRT, where dose prescription and reporting are more demanding.

What is expected from the participants is to:

- Show their interest in contributing to this study in one of the categories (Type 1 or 2 as described in the following) by sending an e-mail to amirhosseinkarimi.phd@gmail.com **before *1 June 2025***. In the e-mail, they should include their name, surname, and affiliation (up to 2 persons).
- **Type 1:** Fill out and register dosimetric data requested in the Excel file (attached to this letter) for at least **15 anonymous lung SBRT patients** (per institution). The participants are encouraged to submit their data **before *1 Sep 2025***.

- **Type 2:** The more data points are collected, the more meaningful statistical analysis will be achieved, making the manuscript more scientific. So, we warmly appreciate the participants if they could collect more patient data. In this case, the participants receive more authorship contributions in the paper if they could submit at least **30 anonymous lung SBRT patients** (per institution) before ***15 Dec 2025***.

  Note: *Focus **only** on the patients with Peripheral Non-Small Cell Lung Cancer (at least 2 cm away from the central mediastinum, particularly the bronchial tree, and at least 1 cm away from the ribs).*

Our best regards,

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References:

[1] ICRU Report 91, 'Prescribing Recording, and Reporting of Stereotactic Treatments with Small Photon Beams', Bethesda, MD, USA, 2017.
[2] I. J. Das *et al.*, 'Dose prescription and reporting in stereotactic body radiotherapy: A multi-institutional study', *Radiotherapy and Oncology*, vol. 182, p. 109571, 2023, doi: https://doi.org/10.1016/j.radonc.2023.109571.