

AB004. Radiotherapy for thymic epithelial tumors: what is the optimal dose?—a systematic review

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Background: Thymic epithelial tumors (TETs) are rare thoracic tumors, often requiring multimodal approaches. Surgery represents the first step of the treatment, possibly followed by adjuvant radiotherapy (RT) and, less frequently, chemotherapy. For unresectable tumors, a combination of chemotherapy and RT is often used. Currently, the optimal dose for patients undergoing radiation is not clearly defined. The available guidelines’ recommendations on RT are based on studies with a low level of evidence, where two-dimensional (2D)-RT was widely used.

Methods: A systematic review of the recent literature regarding the optimal radiation dose for patients with TETs undergoing RT was carried out. It included reports using modern RT techniques such as 3D-CRT, intensity-modulated radiotherapy (IMRT)/volumetric modulated arc therapy (VMAT), or proton therapy. A comprehensive literature search of four databases was conducted following the PRISMA guidelines. Two investigators independently screened and reviewed the retrieved references. Reports with <20 patients, 2D-RT use only, median follow-up time 3 years, three additional studies could be evaluated. A total of 193 patients were analyzed, stratified for prognostic factors (histology, stage, and completeness of resection), and

synthesized according to the SWIM method. The paucity and heterogeneity of eligible studies led to controversial results. Overall, a dose escalation for post-operative RT beyond 50 Gy is not recommended for totally resected tumors, platinum-based chemo plus concurrent RT >54 Gy is recommended for unresectable TETs, while a dose below 52 Gy has been defined as “palliative” for recurrent TETs.

Conclusions: The optimal RT dose for postoperative or primary RT in the era of modern RT did not univocally emerge. Current recommendations remain valid. Doses of 54 Gy or higher can be recommended for definitive RT only. Conversely, this overview can spark new evidence to define the optimal RT dose for each TETs category.

Keywords: Thymoma; thymic carcinoma; radiotherapy; dose

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <https://med.amegroups.com/article/view/10.21037/med-22-ab004/coif>). FM reports that she is an unpaid committee member of Dutch Rare Cancer Platform and Dutch guidelines about Thymic Tumors. The other authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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doi: 10.21037/med-22-ab004

Cite this abstract as: Angrisani A, Houben R, Marcuse F, Hochstenbag M, Maessen J, De Ruyscher D, Peeters S. AB004. Radiotherapy for thymic epithelial tumors: what is the optimal dose?—a systematic review. *Mediastinum* 2022;6:AB004.