AB026. Outcomes and toxicities of definitive radiation therapy for unresected thymic malignancies

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Background: Thymic malignancies are primarily managed with surgery with or without chemotherapy and radiation therapy (RT). Some patients are medically inoperable or technically unresectable. We report the characteristics and outcomes of patients with unresected thymic tumors who were treated with definitive RT at our institution.

Methods: Patients treated with curative-intent radiation for unresected thymic tumors between 1997 and 2023 were identified. Age at diagnosis, sex, histology, Masaoka stage, World Health Organization (WHO) classification, radiation dose/fractionation, presence of paraneoplastic syndrome, survival status, time at local/locoregional/distant failure, chemotherapy and radiation-related toxicities were extracted. Overall survival (OS), patterns of progression and treatment toxicities were assessed.

Results: Thirty-three patients were identified (22 male, 11 female) with a median age of 61 (range, 28–88) years at diagnosis. Twenty-two patients had thymoma and 11 had thymic carcinoma. Masaoka stage was III in 14, IVA in 9, and IVB in 10. Median tumor size was 8.1 cm. Among them, 29/33 received chemotherapy, most commonly cisplatin/doxorubicin/cyclophosphamide and carboplatin/paclitaxel. The median RT dose was 6,000 cGy (range, 4,500–7,000 cGy); five patients were treated below 5,400 cGy. Median dose per fraction was 200 cGy. Twenty-four patients were treated with IMRT, 5 with protons, and 4 with 2D/3D plans. Most patients tolerated RT well with one case of grade 3 esophagitis, one case of grade 3 pneumonitis, and three cases of grade 2 pneumonitis. No acute or late grade 4 or 5 toxicities were observed. Common grade 1 or 2 toxicities included dermatitis, dysphagia, dyspnea, cough, and fatigue. With a median follow-up of 3.3 years (range, 0.5–11.9 years), 3-year OS was 67.5% (range, 49.7–91.5%) and 5-year OS was 59% (range, 39.5–88.2%). At last follow-up, 19 patients had not progressed. Site of first progression was local in 6, locoregional in 8, and distant in 9 (several patients progressed in multiple places synchronously). The 3- and 5-year local failure-free survival were both 80% (range, 65–97%).

Conclusions: Definitive chemoradiation provides high rates of local control in patients with unresected thymic malignancies even in advanced stages.

Keywords: Definitive radiation; thymoma; thymic carcinoma; unresectable thymic malignancy

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Footnote

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at https://med.amegroups.com/article/view/10.21037/med-23-ab026/coif). S.R. reports consulting fees from GRAIL, EXACT and Verily, and stocks of Illumina. S.R. also reports grand rounds at Dartmouth and grand rounds for continuing medical education on cancer screening. A.R. reports grants to institution for investigator-initiated trials from Varian Medical Systems, AstraZeneca, Merck, Pfizer and Boehringer Ingelheim, and consulting fees from Boehringer Ingelheim, AstraZeneca, Merck and MoreHealth. A.R. also reports he serves as a Scientific Advisory Board Member in Merck, Board Member of the International Mesothelioma Interest Group, Member of the Board of Examiners of the American Board of Radiology, the Lung Track Chair of the ASTRO Annual Meeting and the Vice President of the International Thymic Malignancies Interest Group. 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. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study was approved by the Ethics Board of Memorial Sloan Kettering Cancer Center (MSK IRB #16-142) and individual consent for this retrospective analysis was waived.

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