

Long-Term Outcomes in Stage II/III Thymic Epithelial Tumor Patients Treated with Post-Operative Radiotherapy

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Thymic epithelial tumors (TETs) are rare malignancies that originate in the anterior mediastinum. Unlike other tumors of the chest, TETs recur most often in the pleura. The primary treatment of early stage TETs is surgical resection, with the role of adjuvant chemotherapy/radiotherapy controversial. Mixed results have been reported as to whether post-operative radiotherapy (PORT) decreases tumor recurrence or time to recurrence, but PORT can cause short-term and long-term toxicity. Therefore, assessing the benefit of PORT is important. For the present retrospective study, we created a database of stage II/III TET patients seen at Simon Cancer Center from 2000-2023 to examine long-term outcomes. Of the 214 stage II/III TET patients that underwent surgery in the database, 67 patients treated with PORT were isolated. Subsequently, 67 patients who did not receive PORT were matched to the PORT population based on similarities in histology, surgical margins, and chemotherapy received. Local vs. distant tumor recurrence, long-term complications, and overall survival were then compared. The PORT population had the following histologic distribution: 3 Type A, 3 Type AB, 47 Type B1/B2/B3, and 14 carcinoma; for the non-PORT population: 8 Type A, 13 Type AB, 36 Type B1/B2/B3, and 10 carcinoma. There were 16 stage IIA, 6 stage IIB, and 45 stage III patients in the PORT population, and 17 stage IIA, 9 stage IIB, and 41 stage III patients in the non-PORT population. The PORT population had 57 recurrences, whereas the non-PORT population had 20 recurrences ($p=1.02 \times 10^{-9}$). The PORT population had 5 deaths and 50 instances of long-term complications, while the non-PORT population had 3 deaths and 25 instances of long-term complications. Overall, these data do not support the routine usage of PORT in resected Stage II/III TET. Further analysis in larger data sets are warranted.