Objective: The aim of this study was to explore the clinicopathological relationship of tumor size and WHO histological classification with the locally aggressive behavior of TETs.

Method: From January 2010 to January 2022, 524 patients who were diagnosed with thymoma or thymic carcinoma were included in this retrospective study. Relevant clinical data in the database of our institute were reviewed. A Chi-square test and rank sum test were used to identify potential factors correlated with locally advanced TETs, which were further analyzed by binary logistic regression.

Results: In this retrospective study, there were 275 males and 249 females with a median age of 56 years. Ninety-one patients were identified as having locally advanced thymoma. WHO histological classification and tumor size were two hazard factors independent of each other in tumor aggression (Figure 1A). The risk of local invasion increased 2.225 times for each grade in WHO histological classification with a change from type A to TC (95% CI for OR: 1.828-2.708, P<0.001) (Figure 1B). The tumor size cut-off of 5.75 cm represented a distinct boundary in predicting the hazard of local invasion, with the risk for tumors greater than or equal to 5.75 cm in size being 6.959 times greater than that for tumors less than 5.75 cm in size (95% CI for OR: 3.781-12.810, P<0.001) (Figure 1B).

Conclusion: WHO histological classification and tumor size are important factors in predicting the locally aggressive behavior of TETs. The invasion capability of TETs is constantly enhanced with an escalation in WHO histological classification. Tumors greater than or equal to 5.75 cm in size have a higher risk for local invasion.

Jia-Hao Jiang (1), Jian Gao (2), Yong-Qiang Ao (3), jian-yong ding (4), (1) Zhongshan Hospital of Fudan University, Shanghai, China, (2) Department of Thoracic Surgery, Zhongshan Hospital, Fudan University, Shanghai, China, Shanghai, Shanghai, (3) Department of Thoracic Surgery, Zhongshan Hospital, Fudan University, Shanghai, NA, (4) Zhongshan Hospital, St. Louis, MO