Histological tumour type (Required and recommended)

Reason/Evidentiary Support

Tumours should be classified according to the WHO 2015 classification system for thymic tumours (see below).[1,2]

In cases of TETs showing more than one morphological subtype the following should be applied:

1) TETs showing more than one histological thymoma subtype: The diagnosis in such tumours should list all the histological WHO types, starting with the predominant component and then minor components. All should be quantified in 10% increments. This rule does not apply to AB thymoma which is a distinct entity (this should be documented as type AB 100%).[2,3]

2) TETs consisting of a thymic carcinoma component together with one or more thymoma component: Irrespective of the size/percentage of the thymic carcinoma component the diagnosis in such tumours should begin with the label "thymic carcinoma" (specifying the histological type and percentage) followed by the thymoma component(s) (quantified in 10% increments).[1,2]

3) TETs consisting of more than one thymic carcinoma component (with or without a thymoma component, and excluding thymic small cell carcinoma and thymic large cell neuroendocrine carcinoma, see below): the diagnosis in such tumours should begin with the predominant carcinoma; minor carcinoma components should be quantified next in 10% increments, eventually followed by the thymoma components.[1,2]

4) Heterogeneous thymic tumours with a small cell or large cell neuroendocrine carcinoma component: These tumours are labelled 'combined small cell carcinoma' or 'combined large cell neuroendocrine carcinoma'; the various components should be given and quantified in 10% increments.

References

1 WHO (World Health Organization) (2015). *WHO Classification of Tumours of the Lung, Pleura, Thymus and Heart. Fourth edition* Travis WD, Brambilla E, Burke AP, Marx A and Nicholson AG. IARC Press, Lyon, France.

2 Marx A, Ströbel P, Badve SS, Chalabreysse L, Chan J, Chen G, de Leval L, Detterbeck F, Girard N, Huang J, Kurrer MO, Lauriola L, Marino M, Matsuno Y, Molina TJ, Mukai K, Nicholson AG, Nonaka D, Rieker R, Rosai J, Ruffini E and Travis WD (2014). ITMIG Consensus Statement on the Use of the WHO Histological Classification of Thymoma and Thymic Carcinoma: Refined Definitions, Histological Criteria and Reporting. *J Thor Oncol* 9:596-611.

3 Strobel P, Bauer A, Puppe B, Kraushaar T, Krein A, Toyka K, Gold R, Semik M, Kiefer R, Nix W, Schalke B, Muller-Hermelink HK and Marx A (2004). Tumor recurrence and survival in patients treated for thymomas and thymic squamous cell carcinomas: a retrospective analysis. *J Clin Oncol* 22(8):1501-1509.

WHO classification of tumours of the thymus[a,b]

Descriptor	ICD0 codes
Epithelial tumours	
Thymoma	
Type A thymoma, including atypical variant	8581/3*
Type AB thymoma	8582/3*
Type B1 thymoma	8583/3*
Type B2 thymoma	8584/3*
Type B3 thymoma	8585/3*
Micronodular thymoma with lymphoid stroma	8580/1*
Metaplastic thymoma	8580/3
Other rare thymomas	
Microscopic thymoma	8580/0
Sclerosing thymoma	8580/3
Lipofibroadenoma	9010/0*
Thymic carcinoma	
Squamous cell carcinoma	8070/3
Basaloid carcinoma	8123/3
Mucoepidermoid carcinoma	8430/3
Lymphoepithelioma-like carcinoma	8082/3
Clear cell carcinoma	8310/3
Sarcomatoid carcinoma	8033/3
Adenocarcinomas	
Papillary adenocarcinoma	8260/3
Thymic carcinoma with adenoid cystic carcinoma-like features	8200/3
Mucinous adenocarcinoma	8480/3
Adenocarcinoma, NOS	8140/3
NUT carcinoma	8023/3*
Undifferentiated carcinoma	8020/3
Other rare thymic carcinomas	
Adenosquamous carcinoma	8560/3
Hepatoid carcinoma	8576/3
Thymic carcinoma, NOS	8586/3
Thymic neuroendocrine tumours	
Carcinoid tumours	
Typical carcinoid	8240/3
Atypical carcinoid	8249/3
Large cell neuroendocrine carcinoma	8013/3
Combined large cell neuroendocrine carcinoma	8013/3
Small cell carcinoma	8041/3
Combined small cell carcinoma	8045/3
Combined thymic carcinomas	

a The morphology codes are from the International Classification of Diseases for Oncology (ICD-O). Behaviour is coded /0 for benign tumours; /1 for unspecified, borderline, or uncertain behaviour; /2 for carcinoma in situ and grade III intraepithelial neoplasia; and /3 for malignant tumours.
b The classification is modified from the previous WHO classification, taking into account changes in our understanding of these lesions.
* These new codes were approved by the IARC/WHO Committee for ICD-O.