

Annual Report of the Speaker of the Thymic and Mediastinal Pathology WG (2013-14)

1. 1. Membership of the WG: There has been no change in membership to the best of my knowledge. Recruiting young pathologists into this field has been extremely challenging and may require new strategies and incentives in the future.
2. 2. Scientific activities: The main effort of the group in cooperation with other experts in the field was to achieve consensus about the histological criteria for the improved histological classification of thymic and mediastinal tumours along the lines of the WHO classification.

While this effort started in 2011, the relevant manuscript concerning the main controversial thymic tumours, i.e. thymomas and thymic carcinomas was submitted in 2013 and finally published in 2014 (Marx et al. *J Thoracic Oncol* 2014; 9(5):596-611), i.e. just in time to have an impact on and being repeatedly quoted in the upcoming WHO classification of thymic tumours (expected to be published in 2015). The 20 authors were from the US, Asia and Europe of this paper comprised all key experts in the field that were willing and able to contribute of this paper are ESP members and the acknowledgement section of the paper explicitly mentions the generous financial support that was jointly provided by the International Thymic Malignancy Interest Group (ITMIG) and the ESP for the key consensus meeting in Mannheim, Germany in 12-2011. One consequence of this consensus-oriented “early international effort” was the nomination of the speaker of the WG as the responsible co-editor of the thymic section of the upcoming WHO Classification of Tumours of the Lung, Pleura, Thymus and Heart. In addition, the WHO invited virtually all authors of the above JTO manuscript (among others) to become co-authors of the various chapters of the next WHO classification of thymic tumours.

1. 3. International cooperation with The Cancer Genome Atlas (TCGA): This international sequencing and molecular profiling effort has covered a broad spectrum of cancers from all body regions during the last couple of years and is has meanwhile stopped recruiting. Indeed, the last cancers accepted for analysis within the TCGA project have been thymomas and thymic carcinomas towards the end of 2013. The secretary of the Thymus and Mediastinal Pathology WG, Professor Ströbel from Göttingen, Germany, has served as one of the international coordinators of the effort that relies on strict ethical requirements, rigorous quality control of the snap frozen tumor and control tissues, and comprehensive clinical annotations, including follow-up information. With over 120 appropriate cases having been recruited, it can be expected that statistically and clinically meaningful correlations between histological, molecular and clinical features can be achieved – with the perspective to achieve breakthroughs in terms of personalized treatment options. First results can, however, not be expected before 2017.
2. 4. Contribution of the Thymus and Mediastinal Pathology WG to the E2013 in Lisbon, Portugal

The WG organized a scientific symposium about recent discoveries in the field of thymus biology (specifically the contribution of cytokine profiles to intrathymic lymphocyte development); thymus-related immune tolerance and autoimmunity (in relation to the expression of the autoimmune regulator, AIRE); and signalling pathways and their regulation by micro-RNAs in thymomas. An additional highlight was an encouraging interim report about a pioneer project that investigates the feasibility and interobserver reproducibility of the classification of

mediastinal tumours (mainly thymomas and thymic carcinomas) using a web-based telepathology approach.

Furthermore, the WG shared for the first time a slide workshop with the pulmonary pathology WG about epithelial and lymphoid neoplasms and pseudotumours. This experience was so positive – also in terms of a highly motivated and interested audience – that we plan to repeat this undertaking in Belgrade (as already discussed with Prof. Lina Carvalho).

1. 5. Future projects:
 - a. a. Cooperation with the International Committee on Cancer Reporting (ICCR). According to the ESP's commitment to cooperate with the ICCR in order to improve the reporting of all kinds of tumors across the globe through evidence-based standardization, the ICCR has just initiated the respective process for thymic tumours by recruiting 10 pathologists (including 4ESP members) with a special clinical experience and scientific interest in thoracic and thymic pathology. The ambitious idea is to achieve this goal under the leadership of Professor Andrew Nicholson from London, UK, in the first half of 2015.
 - b. b. Contribution of the WG to the ECP in Belgrade in 2015, featuring
 - i. i) a scientific symposium about the recent exciting and highly relevant discovery of thymic epithelial stem cells, cancer stem cells in thymic epithelial tumors and the systematic generation of thymic epithelial cells from embryonic stem cells; recently detected mutations in thymic epithelial tumors derived from the first global sequencing efforts (outside the TCGA project); alterations between the 3rd and the 4th edition of the WHO classification of thymic tumors (that can be expected to be published just before the ECP in Belgrade).
 - ii. ii) a slide workshop in conjunction with the pulmonary pathology WG covering new and "difficult" entities from the realm of thymic neoplasms in the light of refined definitions and new criteria formulated in the then new 4th edition of the WHO Classification of Tumours of the Lung, Pleura, Thymus and Heart.