

## In this issue

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Pathology needs standardization of methods and techniques as well innovative approaches. It is important to continuously improve the reproducibility of our diagnostic tools and strategies by quality management, accreditation and standardized reporting. Standardization may be improved by digitalization, which will increasingly be implemented in our daily work. A large collaborative study of Dutch and Belgian pathologists found a substantial variability for the distinction between deep pT3 and pT4a tumours both between the reviewing pathologists and the included laboratories (<https://doi.org/10.1007/s00428-019-02663-0>). Due to its clinical implication, there is a need for standardized assessment of cancer stage. In the diagnostic procedure of non-small cell lung cancer cytological specimens play an increasingly important role but the quality of immunohistochemical and molecular analyses on cytological specimens is not comparable to histology. A retrospective study on paired cytological and histological tumour specimens by Kuempers et al. (<https://doi.org/10.1007/s00428-019-02632-7>) showed comparable results for PD-L1 expression if a deviation of 10% between the values was tolerated but interobserver variability was more challenging for cytology. Further studies will be needed to establish standardized assessment of biomarkers with impact on oncological therapy on cytology. The assessment of PD-L1 by immunohistochemistry has already become a crucial part for the therapeutic management of many cancer types and may be successfully performed by digital pathology as demonstrated by Kim et al. (<https://doi.org/10.1007/s00428-019-02653-2>). A discordant result compared to light microscopy may be caused by weak PD-L1 staining, anthracotic pigment deposition or decalcification artefacts and needs to be considered.

For the assessment of mammographic findings a precise correlation with pathology is crucial. Some of the detected non-invasive lesions may need an immediate surgical procedure, for others surveillance is the preferred strategy. In particular, the biological significance of lobular neoplasia if diagnosed on a core needle biopsy is still controversial. A retrospective study from three collaborating institutions in the USA by Genco et al. revealed a low rate of upgrade to ductal carcinoma in situ (shown on the cover) or invasive breast

carcinoma in the subsequent excision specimen (<https://doi.org/10.1007/s00428-019-02685-8>). The authors found that the upgrade is significantly associated with a personal history of breast cancer and with radiological asymmetry and architectural distortion. A lack of these adverse factors may allow surveillance of the patients and avoid immediate surgical excision.

The management of hereditary diseases requires a collaboration between pathology and human genetics. Palacios et al. report joint recommendations by the Spanish societies of Pathology and Human Genetics for BRCA testing, which can be used both for screening of individuals with BRCA germline mutations and for therapy of cancer patients (<https://doi.org/10.1007/s00428-019-02709-3>).

Pathognomonic molecular changes increasingly gain importance for the diagnosis of uncommon tumours such as TRK fusions in secretory carcinoma of the salivary gland. Bell and colleagues demonstrated the reliability of pan-TRK immunohistochemistry in the confirmation of secretory carcinoma in comparison to FISH, which enables an easier diagnostic procedure and was previously demonstrated for MYB fusions in adenoid cystic carcinoma (<https://doi.org/10.1007/s00428-019-02640-7>). However, in a small subset of cases alternative molecular techniques including FISH and RT-PCR may still be required.

The importance of biobanks for the study of rare tumours in combination with a national cancer registry is addressed by Vesterinen et al., who were able to retrieve almost two thirds of all registered pulmonary carcinoids from Finnish hospital-integrated biobanks (<https://doi.org/10.1007/s00428-019-02625-6>). The study highlights also the importance of hospital-based biobanks for patient care and the need for a Europe-wide legislation to establish biobanking as a regular part of the health care system.

Finally, a study by Kamaradova et al. addresses the occurrence of serrated changes and lesions in inflammatory bowel disease (IBD) and their potential role in IBD associated carcinogenesis aside from conventional dysplasia (<https://doi.org/10.1007/s00428-019-02627-4>).