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Abstracts

32nd Congress of the ESP and XXXIII International Congress of the IAP

Oral Free Paper Sessions

OFP-01 Joint Oral Free Paper Session: Uropathology / Nephropathology

OFP-01-001
Kidney biopsy codes for pathologists-mapping to SNOMED CT
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Background & objectives: The "Kidney Biopsy Codes (KBC)" project provides terms that allow any diagnosis and/or histomorphological pattern for a non-neoplastic kidney biopsy to be coded. We explored whether mapping to SNOMED CT is feasible, to enable aggregation and computerized exchange of data.
Methods: For KBC terms for which an unambiguous match with a pre-existing SNOMED CT concept was available, both 'parent concept' and the place in the SNOMED taxonomy were established. For remaining terms, we explored whether these could be defined by combining pre-existing (more simple) SNOMED CT concepts. This process ('post-coordination') is well supported by SNOMED CT and allows extending its content.
Results: Of glomerular terms, 88/195 (45%) could be matched to SNOMED CT. %-matching was more successful for KBC terms designating disease concepts (56%) than patterns of injury (32%). For the majority of terms that could not be mapped, we found that these could indeed be defined as a compositional expression of pre-existing SNOMED CT concepts (post-coordination). We suggested concepts that are needed for this post-coordination.
Conclusion: SNOMED CT is considered the standard for documenting, encoding and exchanging medical data in/between health information systems. This proof-of-concept shows that mapping of KBC terms to SNOMED CT is feasible, in part directly, in part through post-coordination.

OFP-01-002
Molecular analysis of renal transplant biopsies comparing the Edmonton Molecular Microscope with the NanoString Human Organ Transplant Panel
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Background & objectives: Different molecular methods like microarrays or quantitative PCRs were used by several groups on renal transplant tissues. High-resolution determination of the inflammatory infiltrate by NanoString analysis (which was developed for formalin-fixed paraffin-embedded-derived RNA) should be a sufficient approach.
Methods: We used surveillance and indication biopsies from 63 patients whose time-matched second biopsy core had been frozen and analysed by microarray in the INTERCOM/INTERCOMEX study. After re-evaluation according to recent Banff consensus, RNA isolation was performed with Maxwell FFPE kits and led to sufficient RNA yields in 53 samples which were further processed for NanoString analysis (Human Organ Transplant panel).
Results: Morphologically, of the 53 samples analysed (samples from 2011/12 and 2015), twenty-five patients showed no signs of rejection, twelve had borderline rejection, four showed cellular rejection, seven had humoral rejection, and five presented with combined rejection. Preliminary analysis of gene expression by T-distributed Stochastic Neighbour Embedding (t-SNE), Random Forest and Principal Component Analysis (PCA) showed clear differences between samples with rejection (humoral and cellular) and without rejection. Rejection samples revealed high expression of chemokine ligands compared to rejection-free tissues. Borderline rejection shared a common pattern compared to samples without rejection. First results display good correlation with the former molecular diagnosis from the INTERCOM/INTERCOMEX study.
Conclusion: Molecular approach using the NanoString platform may supplement morphological diagnosis of renal grafts especially in unclear cases and thus enhance precision diagnostics with small tissue requirement. Morphological and molecular evaluation in the same biopsy core from FFPE tissue enables direct histological-molecular correlation. Additionally, this technology also improves our understanding of pathophysiology in renal and other transplants.
Funding by: Dr. Werner Jackstädt foundation

OFP-01-003
Arteriolar C4d: a potential prognostic marker in IgA nephropathy – a retrospective study in a Portuguese tertiary centre
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Background & objectives: IgA Nephropathy (IgAN) is the most common glomerulonephritis worldwide. C4d has been recognized as a marker associated with significantly reduced renal survival. We aimed to study the clinical significance of arteriolar immunoexpression of C4d in a cohort of IgAN patients.
Methods: We selected all kidney biopsies with the diagnosis of IgAN, between 2001 and 2017, and reviewed their clinical features; evaluated them according to the Oxford Classification of IgAN 2016 and assessed the presence of vascular lesions. We evaluated the arteriolar and glomerular immunoexpressions of C4d and their association with the baseline and follow-up clinico-histological data thought bivariate and regression analysis.
Results: Arteriolar immunoexpression of C4d was present in 21 (17%) biopsies and associated with mean arterial pressure (MAP), chronic microangiopathy and arterial intimal fibroelastosis. After adjusting to other significant predictors, such as baseline estimated glomerular filtration rate, MAP and the presence of crescents, this immunoexpression remained significantly associated (P values <0.001) with progressive kidney disease.
Conclusion: Arteriolar immunoexpression of C4d is a potential prognostic marker in IgAN. These findings raise the possibility of including immunohistochemistry for C4d in the evaluation of IgAN biopsies.

PS-12-029

Regulation of clinical autopsies in Russia

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Background & objectives: Clinical autopsies still play an important role in healthcare. In different countries they are regulated quite differently. In Russia there is long-term tradition in autopsy pathology and a set of documents regulating this work.
Methods: Brief concise presentation of the basic documents and results of their use according the federal law N323 (accepted on the 21.11 2011) of Russia procedure of clinical autopsies is determined by Ministry of Healthcare and special order of the federal ministry 6.06 2013.
Results: Procedure of autopsy and the forms of record (common and perinatal: foetus, stillborn or new-born). Clinical autopsy has to be conducted when patients died from diseases. In cases of death due external causes and in absence of documents - legal investigation. In RF autopsy is obligatory if there is suspicion on violent death, impossibility to formulate exactly the final clinical diagnosis, hospitalization for less than 1 day, possible relationship with therapeutic or diagnostic medicaments, in cases related to medical interventions, infectious diseases (including suspect), oncology without histology, results of ecological catastrophes, pregnant, in childbirth, new-borns in age till 28 day, stillborn. Clinical autopsies were divided in 5 categories of difficulty
Conclusion: According to reports from regions of Russia in 2018 were done approximately 469000 autopsies. The percentage of discrepancies between clinical and pathological diagnosis – 6,3 % (from 1,2% to 12,1% in different years) we consider not to be objective.

PS-13 Endocrine Pathology

PS-13-001

Utility of fine needle aspiration cytology in the distinguishing between parathyroid and thyroid lesions

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Background & objectives: Fine needle aspiration (FNA) smears of parathyroid glands is often confused with thyroid. Thus, majority FNA of parathyroid glands is unintended. However, ultrasound guided FNA is increasingly used to localize parathyroid glands in abnormal location and in hyperparathyroidism.
Methods: 91 patients underwent parathyroid FNA either unintended during the sampling of thyroid nodules (36 patients) and suspicions metastatic lymph node (7 patients) or specifically to localize parathyroid lesions (48 patients). In addition to cytological examination, measurement of parathyroid hormone in the needle washouts (FNA-PTH testing) was performed in all examined patients and immunocytochemical examination (IC) on 16 FNA specimens.
Results: The most frequent cytological features included: stippled chromatin (34), scattered naked nuclei (30), loose clusters (22), large crowded clusters (17), oxyphilic cytoplasm (13), cribriform or trabecular architecture (10) and follicular pattern (7). Cells with small, dark nuclei and colloid-free background was another sign suggestive of parathyroid origin. 87 FNA smears were correctly diagnosed as parathyroid lesions in conjunction with FNA-PTH testing and/or IC.
Conclusion: The architectural pattern and cellular features help to distinguish between parathyroid and thyroid in the FNA smears. FNA-PTH testing in conjunction with FNA is the most useful adjunct to determine whether the FNA specimen represents parathyroid or thyroid lesions. In addition immunocytochemical examination increases the diagnostic accuracy of the FNA.

PS-13-002

Clinicopathological impact of C228T mutation of telomerase reverse transcriptase promoter in follicular cell-derived thyroid carcinoma

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Background & objectives: C228T mutation of telomerase reverse transcriptase promoter (TERTp) has been identified as specific for malignancy in thyroid and indicative of poorer prognosis.
Objective: to determine the prevalence and prognostic value of C228T TERTp mutation in thyroid malignancies of our institution.
Methods: From 1993 to 2017, 147 cases of thyroid follicular cell-derived carcinomas were identified with histological material available, corresponding to 122 women and 47 men, with age range between 7 and 83 years. C228T TERTp mutation was determined by pyrosequencing. Histopathological and clinical data were recorded. Follow-up was available in 143. Statistical analysis for variables of clinical interest was performed.
Results: The mutation was identified in 18 of the 147 cases (12.2%), with higher percentages in poorly differentiated carcinomas and well differentiated carcinomas with a poorly differentiated component than in well differentiated carcinomas (37.5% vs 7.3%), with statistically significant difference. None of the cases of anaplastic carcinoma held the mutation. It was more prevalent in stages II to IV vs stage I (25.8% vs 8.62%), in cases that presented recurrence or persistence vs cases that did not (25.9% vs 9.56%), and in cases with death due to disease or persistent disease at follow-up vs cases free of disease (28.57% vs 9,83%), with statistically significant differences in all of them ($p<0,05$) .
Conclusion: C228T TERTp mutation was more prevalent in poorly differentiated thyroid carcinomas and carcinomas with poorly differentiated component, and in cases with higher stage, persistence and / or recurrence of the disease and worse prognosis. These associations suggest that the presence of this mutation could indicate a more intense treatment or a closer follow-up.
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PS-13-003

NIFTP vs FVPTC: a cyto-histo morphological study with clinical correlation and diagnostic challenges

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Background & objectives: NIFTP , introduced in WHO 2016 classification of endocrine tumours is an indolent lesion distinct from FVPTC with strict diagnostic criteria. It's cytological features aren't clearly defined.
To study the cyto-histo morphological features and uncover useful morphological clues to distinguish them.
Methods: Retrospective study (Jan 2016- Dec 2019). All cases of NIFTP and FVPTC diagnosed during this period are included. The FNAC smears were reviewed for: cellularity, nuclear features (9 parameters) and architectural features (11 parameters). Gross details (5 parameters) and Histopathology (9 parameters) were documented for each case.
Results: NIFTP: 12 cases, FVPTC: 14 cases. FNAC: Nuclear membrane irregularity, chromatin margination, atypical bare nuclei