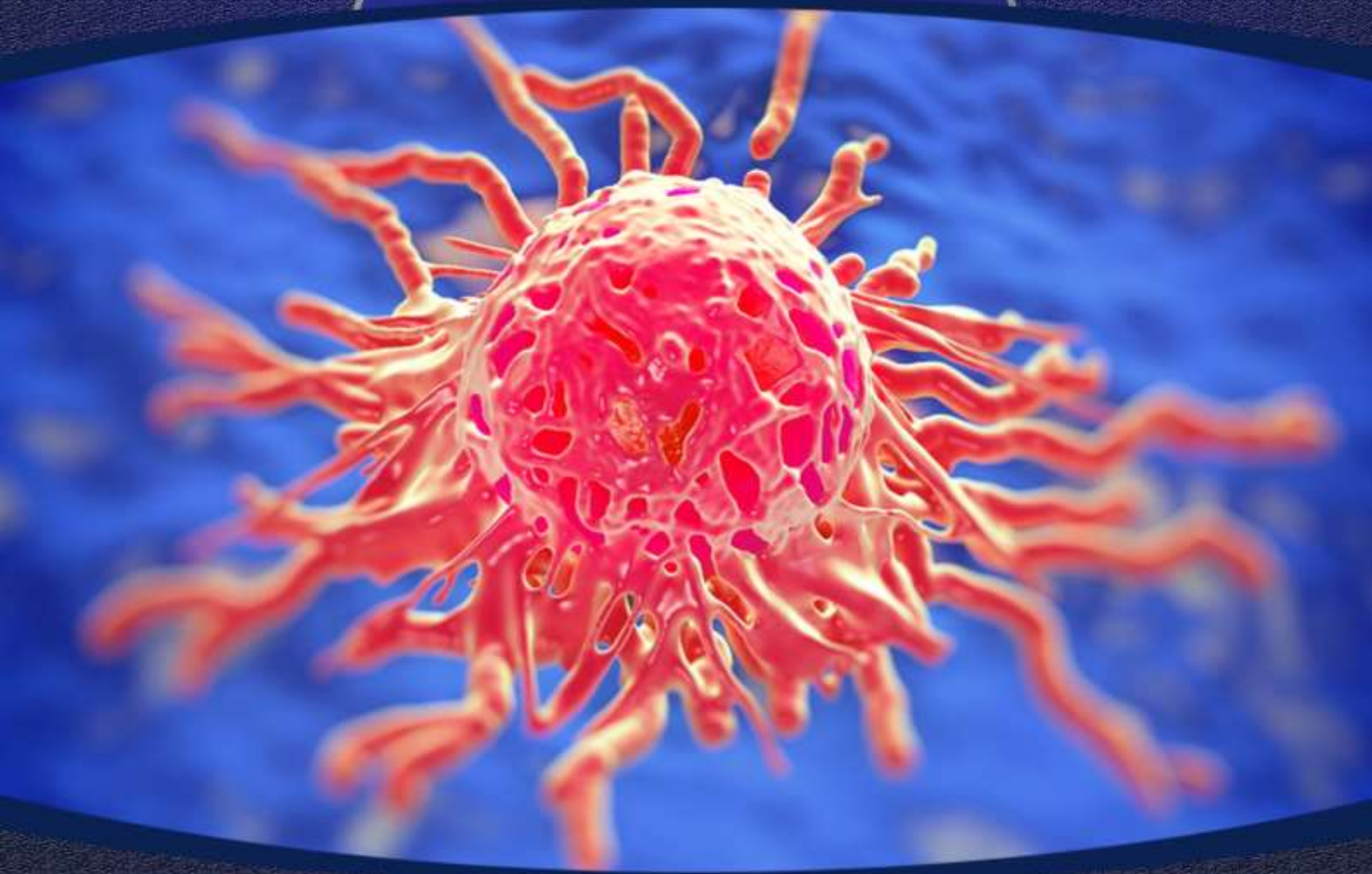
ADVANCING PATHOLOGY FOR CANCER DIAGNOSIS, STAGING AND PROGNOSIS

ABSTRACTS



27-29 June 2017

Location: Online

EuroSciCon

DESCRIPTION

This event has CPD accreditation

www.

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This abstract book will be finalised two weeks before the event

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Invited Speakers Abstracts

Dr. Derek Stirewalt.

AML Prognostic Biomarkers: The Need To Go Beyond Basic Genomic Mutation Results

AML is one of the most common and lethal hematopoietic malignancies, and as our population ages, AML will become an increasing health problem. Much of the previous survival gains for AML have hinged upon our ability to better risk-stratify patients for the appropriate therapies; however, these risk-stratification models remain relatively imprecise at predicting outcomes. The objectives of this talk will be to illuminate potential confounders contributing to the imprecision of current risk-stratification models and identify potential methods for overcoming these barriers. In addition, many of these discussed concepts are directly applicable for risk-stratification models for other types of cancer.

Professor Nives Pecina-Slaus

Overview of Wnt Signalling Involvement in Glioma Initiation and Progression

Cancer is caused by mutations in our genome and can be considered a genetic disorder in which the normal control of cell growth is impaired. We understand now that cancer is not a single disease but rather a collection of diseases with specific genetic profiles. Wnt pathway has been established as one of the basic signalling pathways whose misregulation often governs tumorigenesis. Investigations on key players of the Wnt signalling: beta-catenin (CTNNB1), TCF1, LEF1 and SFRP3 are presented. Our results demonstrated that 50% of glioblastomas (grade IV) and 56% of astrocytomas (grades II and III) showed upregulation of beta-catenin. Its nuclear localization which is an indicator of pathway's activation was found in 52.1% of glioblastomas. Also, transcription factors of the pathway were upregulated. Strong TCF1 and LEF1 expression was observed in 51.6% and 71% of glioblastomas. Discriminant function analysis showed that variable –the strong expression of LEF1, emerged to discriminate between astrocytomas and glioblastomas. This suggests that LEF1 may serve as a potential diagnostic marker. SFRP3 protein expression levels were found to be decreased in the nucleus in higher grade astrocytoma, whereas when the SFRP3 was located in the cytoplasm an increased expression level of SFRP3 was identified in the high grade astrocytomas when compared with those of a low grade. This may suggest that SFRP3 can also act as an agonist of Wnt signaling and promote invasive behaviour. Our findings contribute to better understanding of human glial tumor genetic profile and suggest that Wnt signalling plays important role in its etiology.

Professor Patricia Tai

Pathology of neuroendocrine carcinoma of the skin (Merkel cell)

Merkel cell carcinoma (MCC) of the skin is diagnosed by immunohistochemical staining with positive cytokeratin-20 (CK20) and negative thyroid transcription factor-1. It expresses epithelial markers such as AE1/AE3, CAM 5.2, pan-cytokeratin, epithelial membrane antigen,

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and Ber-EP4, and may stain for various neuroendocrine markers, including chromogranin, synaptophysin, somatostatin, calcitonin, and vasoactive intestinal peptide.

Favorable prognostic factors are intratumoral CD8+ lymphocyte infiltration, and MCPyV LT (Merkel cell polyoma large tumor antigen) expression. Unfavorable factors are lymphovascular invasion, p63 expression and immunosuppression. With the recent approval of PDL1 inhibitor Avelumab for metastatic disease, pathologists will serve a greater role in management.

Professor RIADH BEN TEMIME

Synchronous primary endometrial and ovarian carcinomas: Diagnostic challenges and prognosis

Synchronous primary cancers of the endometrium and of the ovary coexist in approximately 10% of all women with ovarian cancer and in 5% of all women with endometrial cancer. It is important to distinguish the presence of two independent primary tumors from a single primary tumor with an associated metastasis, in terms of therapeutic management and prognosis. Synchronous ovarian and endometrial tumors are associated with a favourable prognosis, particularly those of the endometrioid type.

Professor Nives Pecina-Slaus

Overview of Wnt Signalling Involvement in Glioma Initiation and Progression

Cancer is caused by mutations in our genome and can be considered a genetic disorder in which the normal control of cell growth is impaired. We understand now that cancer is not a single disease but rather a collection of diseases with specific genetic profiles. Furthermore, we know that malfunctioning of specific signal transduction pathways is responsible for tumor formation and development. Wnt pathway has been established as one of the basic signalling pathways whose misregulation often governs tumorigenesis. Investigations on key players of the Wnt signalling: beta-catenin (CTNNB1), TCF1, LEF1 and SFRP3 are presented. Our results demonstrated that 50% of glioblastomas (grade IV) and 56% of astrocytomas (grades II and III) showed upregulation of beta-catenin. Its nuclear localization which is an indicator of pathway's activation was found in 52.1% of glioblastomas. Furthermore, transcription factors of the pathway were upregulated, too. Strong TCF1 and LEF1 expression was observed in 51.6% and 71% of glioblastomas. Discriminant function analysis showed that variable –the strong expression of LEF1, emerged to discriminate between astrocytomas and glioblastomas. This suggests that LEF1 may serve as a potential diagnostic marker. SFRP3 protein expression levels were found to be decreased in the nucleus in higher grade astrocytoma, whereas when the SFRP3 was located in the cytoplasm an increased expression level of SFRP3 was identified in the high grade astrocytomas when compared with those of a low grade. This may suggest that SFRP3 can also act as an agonist of Wnt signaling and promote invasive behavior. Our findings contribute to better understanding of human glial tumor genetic profile and suggest that Wnt

signalling plays important role in its etiology.

Changes in gene structure and protein expression of DVL1, DVL2, DVL3 and transcription factors TCF1 and LEF1 in astrocytic brain tumors

Anja Kafka

Astrocytomas are the most common primary tumors of the central nervous system. According to the WHO classification, there are four grades of astrocytoma, considering their histology, molecular characteristics and prognosis, where the grade IV (glioblastoma) is the deadliest form and still without effective therapy. The aim of this experiment was to investigate changes in gene structure and protein expression of Dishevelled family and transcription factors TCF1 and LEF1, the molecular components of the Wnt signaling pathway, in astrocytic brain tumors and compare results with clinical parameters. Four selected microsatellite markers for DVL1 (D1S468 and D1S243), DVL2 (D17S960) and DVL3 (D3S1262) genes have shown a significant number of samples demonstrating MSI and LOH, genetic changes that contribute to the genome instability in cancer. Diffuse astrocytomas (WHO grade II) analyzed with D1S468 ($p=0.008$) have shown the highest percentage of MSI (70%), while LOH was the most common in glioblastoma (31.2%) analysed with D3S1262. The results obtained on the total sample indicate that the microsatellite instability is constantly present, with a more frequent appearance in lower grades and may be the cause of astrocytoma formation, whereas large deletions are significantly associated with the highest grade and have a role in progression. The levels of DVL1, DVL2 and DVL3 protein expression did not show statistically significant correlation with genetic changes. Nevertheless, statistically significant differences in the number of cells with certain level of expression of a single protein between the grades were observed. Bivariate correlation of all analyzed proteins showed a statistically significant positive correlation between DVL3 and TCF1 ($p=0.020$), DVL3 and LEF1 ($p=0.006$), TCF1 and LEF1 ($p=0.021$), while DVL1 and DVL3 were negatively correlated ($p=0.002$). DVL1 was also negatively correlated ($p<0.001$) with astrocytoma grade, while DVL3 ($p<0.001$), TCF1 ($p=0.008$) and LEF1 ($p<0.001$) showed positive correlation with malignancy grade suggesting involvement of these proteins in malignant progression. These results contribute to a better understanding of the molecular profile of astrocytic brain tumors and could serve as molecular markers of progression.

Oral Presentation Abstracts

Oral presentations will be added after the submission deadline

Day 1:

Day 2:

Day 3:

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Poster Presentation Abstracts

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