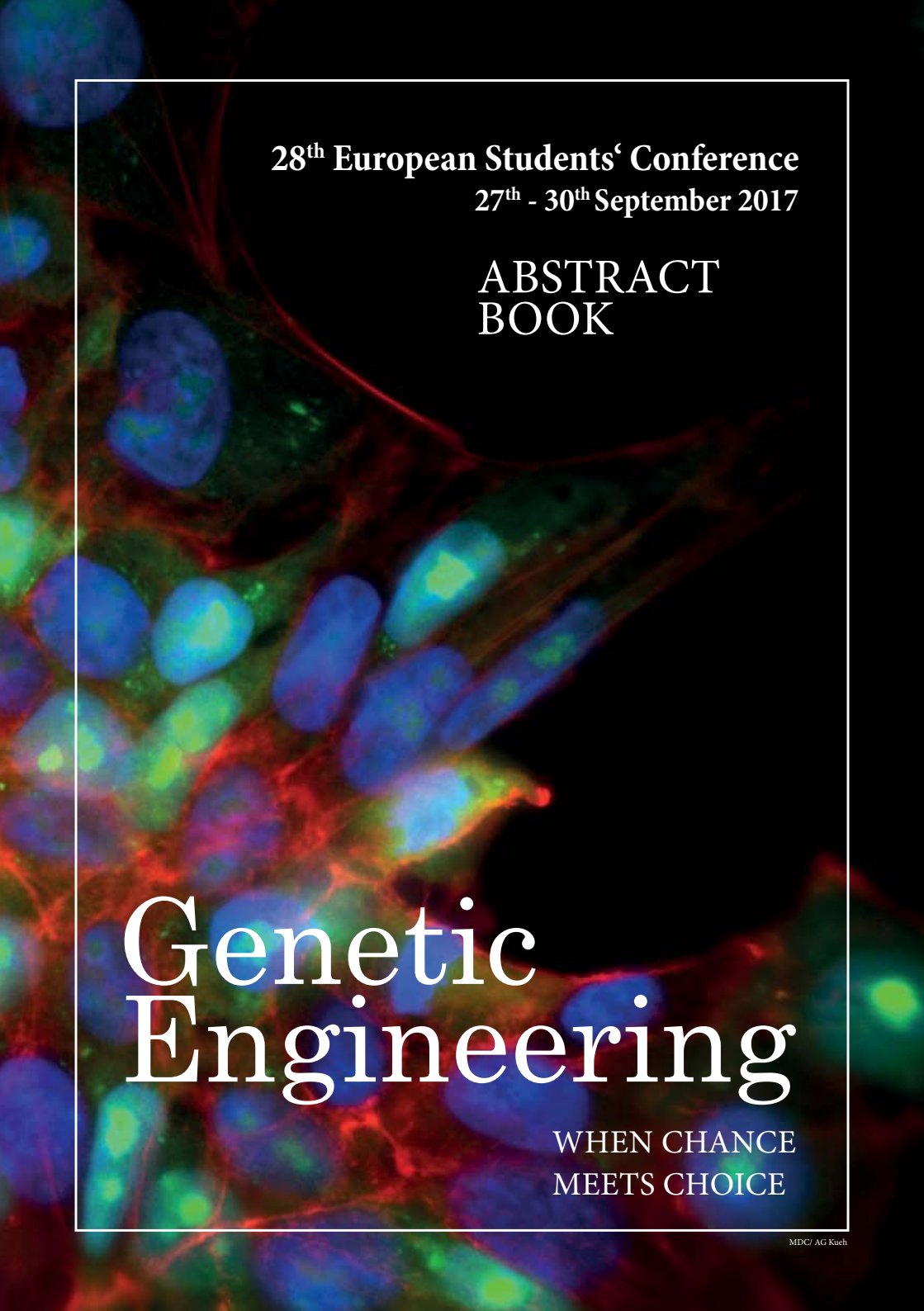

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ABSTRACT BOOK

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187

Pathology

224 Peculiarity of catenin-cadherin activity in embryonal testicular carcinoma

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ABSTRACT TITLE: Peculiarity of catenin-cadherin activity in embryonal testicular carcinoma

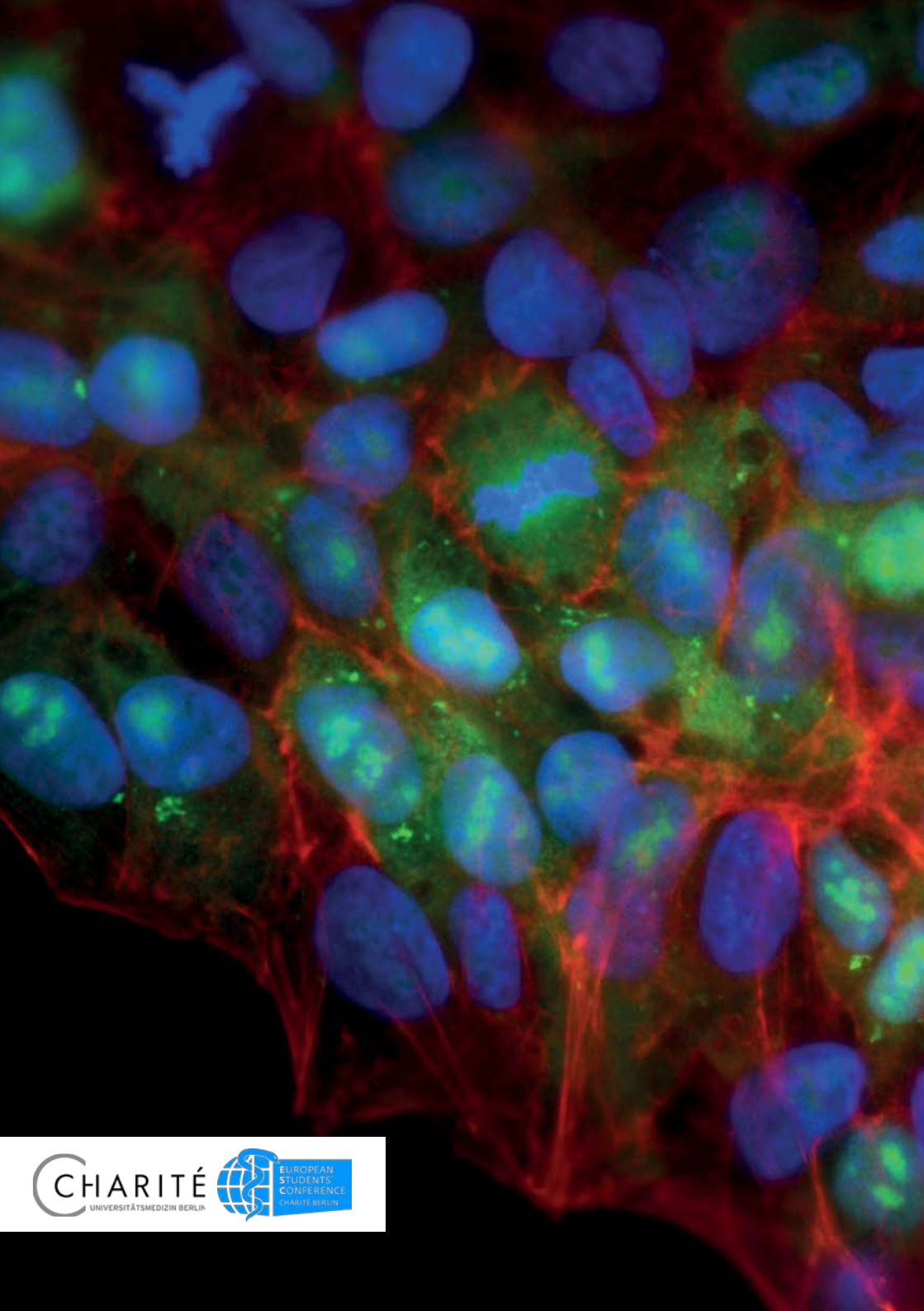
INTRODUCTION: Embryonal carcinoma (EC) is common testicular germ cell tumor with a median age at diagnosis between 25 and 29 years old. Several promising biomarkers for detection, prognosis, and targeted therapeutics are now under evaluation. Understanding of the molecular events leading to the development and progression of genitourologic malignancies, new markers of detection, prognostication, and therapy prediction can be exploited in the management of these prevalent tumors. The purpose of our work was detection of immunohistochemical peculiarities of catenin activity in the embryonal testicular carcinoma in connection with proliferative activity.

METHODS: We analyzed 39 cases of embryonal testicular carcinoma for the period from 1993 to 2013. From the prepared blocks made serial sections thick 5.10-6 m. Slides were stained with hematoxylin and eosin, according to van Gieson's. Immunohistochemical examination (IHC) was performed with monoclonal antibodies (mAb) to Ki-67, β-catenin (beta-catenin) and E-cadherin. Spearman (R) coefficient was detected.

RESULTS: In our material we observed embryonal testicular carcinoma of 5.98±0.52 cm size in testis 7.19±0.48 cm of 30.85±1.16 y.o. patients. Grossly embryonal testicular cancer has been presented unclearly in most cases, and sometimes with clearly outlined single node (in 3 cases had the appearance of a multicentric growth) with gray, gray-whitish, sometimes with hints of pink and yellow color with tipical focal translucency of tumor tissue. Tumor affects testis totally and subtotally in 30 (76.92%) cases, the remaining 9 cases (23.08%) had been with injury up to 2/3 of the testicular volume. Tumoral volume was varied and averaged (93,96 ± 18,37) ×10-6 m3, while the volume of removed testis was (126,87 ± 22,73) ×10-6 m3. Embryonic cancer invasion in paratesticular structure was observed in 12 (30.77%) cases. We observed in all of these cases involvement of testicular covering and spermatic cord. In 9 (23.08%) cases had been revealed tumoral invasion in the epididymis. Histological investigation revealed that embryonic cancer has been characterized by combination of different areas of the structure: solid, forming a diffuse field, and acinar, tubular and papillary structures. In this last have as good and poorly developed connective tissue background. Tumoral cells are characterized by well-defined cytoplasm, polymorphic hyperchromatic nuclei with distinct nucleoli. The mitotic activity of the cells is high. Stroma is well expressed and characterized by moderate lymphoid infiltration, which in 32 (82.05%) cases combined with neutrophilic inflammatory reaction.

Apoptotic changes are observed in all cases of embryonic cancer. Angioinvasion is observed in all cases also, while ingrowth occurred both in blood and lymph vessels. Evaluation of expression for immunohistochemical staining with usual beta-catenin expression has been demonstrated in the membrane of normal epithelium as uniformly strong with clear detection of the intercellular borders. Such localization is observed mainly in our results with uneven level of expression from weak till strong. There are areas with negative results. Simultaneously we observe weak immunoreactivity in cytoplasm of cells of tumor and cells with nuclear positive immunoreactivity. Nuclear localization has been observed both in isolate and grouped cells of tumor, but percent of cells with nuclear and/or cytoplasmic localization was low. Expression of E-cadherin (transmembrane glycoprotein that mediates epithelial cell-to-cell adhesion) was weak almost in all investigated cases with cytoplasmic/membrane localization of positive areas. The loss of E-cadherin could be recognized as result in the disruption of cell clusters. It is therefore, postulated that E-cadherin may function as a tumor suppressor protein. The loss of E-cadherin has been associated with metastasis and poor prognosis in invasive cancer. It is known that Ki-67 is a prognostic factor in various cancers. We have estimated correlation for IHC investigation with distribution for level of expression and level of correlation between different monoclonal antibodies: Ki-67 and E-cadherin ($R=0.684$, $p=0.0023$), Ki-67 and β-catenin ($R=0.562$, $p=0.0031$), E-cadherin and β-catenin ($R=0.737$, $p=0.0014$)

CONCLUSION: EC of testis has been characterized histologicaly with combination of different areas of the structure: solid, forming a diffuse field, and acinar, tubular and papillary structures with different developed connective tissue background. Tumoral cells are characterized by well-defined cytoplasm, polymorphic hyperchromatic nuclei with distinct nucleoli. Embryonic cancer is characterized pronounced reducing of membranous β-catenin expression (that is usual localization of that protein) with uneven level of expression from weak till strong. Simultaneously nuclear positive immunoreactivity has been appeared in embryonic cancer in isolate and grouped cells of tumor. Correlation between Ki-67 and β-catenin expression is 0.562, between E-cadherin and β-catenin is 0.737.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