



25th European Congress of Pathology

Pathology – A gate to the future

31 August – 4 September 2013, Lisbon
Centro de Congressos de Lisboa, Portugal

www.esp-congress.org

Abstracts



in collaboration with the Portuguese Society
of Pathology/Portuguese Division of the
International Academy of Pathology

endocrine tumors (4 carcinoids and one neuroendocrine carcinoma with lung metastases); one cholecystic carcinoid; one cholecystic metastasis from an unsuspected pulmonary adenocarcinoma; one pericystic metastasis from a signet-ring cell gastric carcinoma; one metastasis from a colonic adenocarcinoma within a hernia sac; invasive ductal mammary carcinoma within a supramammary lipoma; Paget disease in hemorrhoids; carcinomatous embolus within hemorrhoids from a previously unsuspected squamous cell carcinoma of the uterine cervix.

Conclusion: Even low in frequency, the incidental findings in otherwise unremarkable specimens have revelatory character for previously unrecognized severe diseases, thus imposing the necessity of histopathologic examination of any tissue, no matter how trivial it looks at a first glance.

PS-24-015

A new ultra-rapid immunohistochemical staining technique using an alternating current electric field: Its values for intraoperative consultation

M. Endo*, A. Molohashi, J.-i. Akahira, Y. Akagami, Y. Minamiya

*Sendai Kousei Hospital, Dept. of Pathology, Japan

Objective: A new ultra-rapid immunohistochemical staining technique using an alternating current (AC) electric field has been developed by Akagami Y. and Minamiya Y. et al. We tried to prove its values for intraoperative consultation with frozen sections.

Method: Resected 20 metastatic pulmonary tumor and one lymph node with carcinoma metastasis obtained our hospital, from April 2012 to March 2013, provided for intraoperative consultation were chosen for this study. After removal, the specimens were immediately processed into a standard method of frozen section. Frozen sections were cut at 5 μ m and placed on slides, air-dried for 30 s, fixed in acetone for 2 min at room temperature, air-dried for 15 s at room temperature, and subjected to the staining procedure. The sections were incubated under the novel technique; high-voltage, low-frequency AC electric field, for 2 min, with nine antibodies respectively, such as CK7, CK20, TTF-1, Napsin A, p63, CDX-2, CD10, vimentin and thyroglobulin according to primary tumor sites. After incubation, the sections were stained ordinary IHC-DAB procedure.

Results: All of the specimens were stained within 40 min, and were obtained positive signals for respective origins such as colo-rectal, renal and thyroidal carcinomas.

Conclusion: The novel ultra-rapid technique was considered to become a valuable and beneficial method for intraoperative consultation.

PS-24-016

Small intestine apoptosis evaluation after haemorrhage followed by volume replacement with colloid and crystalloid solutions in a pig model

H. Vala*, A. Ortiz, R. Cruz, C. Garcia, A. Silva, C. Venâncio, J. Mesquita, D. Ferreira

*Escola Superior Agrária de Viseu, Instituto Politécnico de Viseu, Portugal

Objective: Ischemia may induce apoptosis in the small intestine and seems to be exacerbated by reperfusion. The aim of this study was to compare apoptosis in the small bowel after haemorrhage, followed by volume replacement with hydroxyethyl starch (HES) 130/0.4 and Ringer lactate (RL) solutions.

Method: 25 ml/kg of arterial blood were removed from the femoral artery in 18 Large White pigs under general anaesthesia with propofol and remifentanyl. Volume was replaced using RL in group1 ($n=9$), and HES130/0.4 in group2 ($n=9$), 20 min after bleeding. 1 h after volume replacement, pigs were euthanized. Segments of duodenum, jejunum and ileum were studied immunohistochemically with in situ TUNEL method for apoptosis detection. Data is expressed as apoptotic index (AI).

Results: Group1: Duodenum (AI=41.7 %), jejunum (AI=33 %) and ileum (AI=32.2 %); Group2: Duodenum (AI=24 %), jejunum (AI=24 %) and ileum (AI=33.6 %). AI was significantly higher in group1 for duodenum and jejunum ($P=0.006$ and $P=0.046$, respectively).

Conclusion: HES130/0.4 administration was associated with a smaller percentage of apoptosis in duodenum and jejunum, when comparing with RL solution. These results may be related with the better tissue perfusion and improved microcirculation usually associated with the administration of HES130/0.4. Funding: FEDER funds through COMPETE Program, and by Portuguese FCT (COMPETE: FCOMP-01-0124-FEDER-009525)

PS-24-017

The influence of silver nanoparticles on proliferation and apoptotic activity of glioblastoma multiforme cultured on in ovo model

K. Urbańska*, J. Sokolowska, M. Szmidt, P. Sysa

*WULS-SGGW, Dept. of Morphological Sciences, Warsaw, Poland

Objective: Due to ability to cross the blood-brain barrier and affinity for acidic environment, silver nanoparticles (AgNPs) can be a useful tool in anticancer therapy of CNS tumors, especially those of neuroepithelial origin. Thus we evaluated the influence of AgNPs on proliferation and apoptotic activity of glioblastoma multiforme (GBM) cultured on in ovo model.

Method: GBM cells line U-87 were placed on the chorioallantoic membrane of the chicken embryos at day 7th. At day 14th tumors were divided into three groups: control ($n=20$), AgNPs ($n=20$)- tumors treated with colloidal AgNPs (40 ppm) and placebo ($n=15$)- tumors supplemented with aqua pro injectione. Four days later tumors were isolated and processed by common paraffin technique. The proliferation activity of GBM was established on the basis of mitotic and Ki-67+ cells index. The number of TUNEL positive cells were calculated to assess apoptotic index.

Results: The mean mitotic index for control group was 8,54, proliferation index 28,72 % and apoptotic index was 1,12 %. The same examined parameters for AgNPs and placebo groups were: 5,62, 20,93 %, 2,05 % and 7,88, 27,29 %, 1,07 % respectively. The mean values for all examined parameters differ significantly between AgNPs and other groups.

Conclusion: AgNPs can influence tumor's growth inhibition, however it required more studies.

PS-24-018

Linkers for rare cancer cells isolation

J. Budna*, K. Sterzynska, E. Frydrych-Tomeczak, H. Maciejewski, M. Zabel

*Wroclaw Research Centre EIT, BioMed, Poland

Objective: The high mortality of different cancer patients is due to a late diagnosis at an advanced stage. This is why screening of high risk patients became a crucial issue. Methods of detection and evaluation of cancer cells (i.e. circulating tumor cells, CTCs) are expected to be accurate, selective and efficient. The aim of this study was to create the silica linkers for effective antibodies binding on the surface of a device for selective CTCs isolation.

Method: The system was based on glass slides coated with silica linkers containing several functional groups- amino, epoxy, thiocyanate and isocyanate. The binding of target cells was mediated by the antibody against epithelial cell adhesion molecule (EpCAM)-common for carcinomas, bound with the silica linker. Experiments were conducted using suspension of colon, breast cancer and control cell lines.

Results: We successfully isolated EpCAM-positive colon and breast cancer cells using our system. The best results were achieved using silica linkers with amino groups comparing to other tested, what means that effectiveness of antibodies binding was the highest in this case.

Conclusion: The system has a potential to become an important device to enrich CTCs in vitro (and after improvements in vivo) increasing prognostic accuracy.