

26th European Congress of Pathology

Pathology – Understanding disease

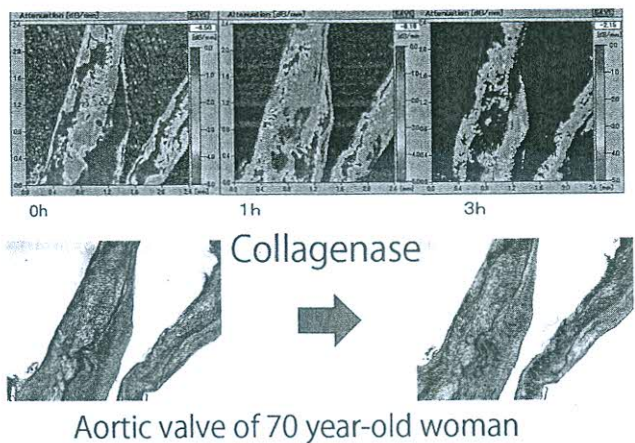
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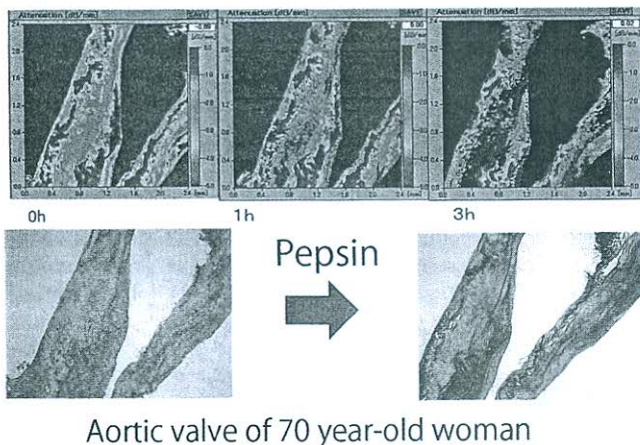
Abstracts

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a Attenuation change after protease digestion



b



PS-15-009

Histopathological evaluation of farm animals living near a uranium mine as sentinels of human's exposure and health hazards

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Objective: In Portugal uranium mines were exploited producing tons of wastes that were left in these areas. Previously the genotoxic, immunotoxic and histopathological effects of environmental exposures in wildlife vertebrates and humans were assessed. To evaluate exposure to metals and radionuclides and histopathological effects in farm animals bred nearby a uranium mine area (Central, Portugal). Besides living closer to humans they are part of their diet and can be used to predict human exposure and health effects.

Method: 5 adult chickens were necropsied and samples fixed in 10 % neutral-buffered formalin, for a maximum of 48 h, embedded in paraffin wax, stained for routine histopathological diagnosis and also weighted frozen, lyophilized and homogenized for radionuclides' analysis).

Results: Lesions observed were compatible with a multisystemic process, with intense lymphoid infiltration and with coalescing foci of uniformly immature lymphoid cells (lymphoblastic phenotype), indicating a neoplastic lymphoproliferative disease (NLD).

Conclusion: The NLD was, apparently from viral etiology, which could result from alterations in the animal's immune system. Previously the

authors found decreased levels of NK and T lymphocytes in inhabitants from the same region, which increases the organism's susceptibility to both carcinogenesis and viral infections, but also to virus-induced oncogenesis.

PS-15-010

Immunofluorescence method to detect apoptotic events in the duodenum after a situation of hypoperfusion - preliminary results

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Objective: Apoptosis plays a key role in intestinal injury, as response to ischemia. In this study, apoptosis in the duodenum after haemorrhage and volume replacement was evaluated with M30, in a pig model.

Method: Apoptosis was evaluated in paraffin sections of duodenum from pigs that underwent total intravenous anaesthesia (TIVA) with propofol and remifentanyl, and controlled bleeding and volume replacement using Ringer's lactate (Group1, $n=6$). Apoptosis was also evaluated in a control group of animals that underwent TIVA, without bleeding ($n=6$). M30 Cytodeath immunofluorescence assay used a mouse monoclonal antibody (M30clone) (Roche) for detection of a caspase cleavage product of cytokeratin 18.

Results: Group1: epithelial cells from the tips of the villi showed strong positive reaction, decreasing towards the body of the villi, negative in crypts and glands. Control group: epithelial cells from the tips of the villi showed a weak positive reaction, also decreasing towards the body and negative in crypts and glands.

Conclusion: Apoptosis occurred mainly in the epithelium of the villi, appearing to precede intestinal mucosa desquamation. Subsequent studies are being developed to determine the apoptotic index and correlation between immunohistochemical methods in small intestinal segments in the two groups of this study.

PS-15-011

Characterising changes in the immune cell population of the tumour microenvironment following treatment with external beam ionising radiation and a TLR7 agonist

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Objective: Infiltration of immune cells into the tumour microenvironment has diverse effects on tumour cell survival, proliferation and response to treatment with radiotherapy (RT). The impact of RT on infiltration of distinct immune cell populations into the tumour is unclear. If RT or RT in combination with immunotherapy leads to changes in the tumour associated milieu, the manipulation of effector/suppressor immune cell populations may lead to improved anti-tumour immune responses.

Method: Immune cell infiltration was compared in a CT26 colorectal murine model after single and fractionated-dose RT, combination with a novel TLR7 agonist and no treatment. Immunohistochemistry of frozen tumour sections and Definiens tissue analysis software were used to quantify infiltration of immune cells into the tumour microenvironment.

Results: Fractionated-dose RT resulted in a significant increase of CD8+ cell infiltration and compared to the control, the addition of a TLR7 agonist did not further increase the difference. Furthermore a significant decrease of CD11b+ cell infiltration with fractionated-dose RT and TLR7 agonist occurred compared to the control.

Conclusion: This indicates better patient survival using fractionated-dose RT as increased infiltration CD8+ cells predicts longer survival. The