

113

IMMUNOHISTOCHEMICAL EXPRESSION OF HER-2 RECEPTOR IN MAMMARY GLAND TUMOURS OF FEMALE DOGS

A. Rodo and E. Malicka

Warsaw University of Life Sciences, Faculty of Veterinary Medicine,
Department of Clinical Sciences, 02-766 Warszawa, Nowoursynowska 159c,
Poland

Introduction: In veterinary medicine there are some reports on the amplification of the *c-erbB-2* oncogene and overexpression of the HER-2 protein in dogs with mammary tumours.

Materials and Methods: Material for the investigation comprised mammary gland tumours collected from dogs attending veterinary clinics for surgical procedures or archival samples. Altogether there were 18 adenomas, 32 simple adenocarcinomas, 31 complex adenocarcinomas and 12 solid carcinomas. Histopathological and immunohistochemical examinations were performed.

Results: HER-2 expression was greater in carcinomas than in adenomas. There was no correlation between carcinoma type and tumour grade or the expression of HER-2 receptor. A positive correlation was observed with HER-2 expression and proliferative activity, but there was a negative correlation with oestrogen receptor- α expression. There was no correlation with p53 expression.

Conclusions: HER-2 expression occurred more frequently in malignant carcinomas than in benign adenomas and was associated with high proliferative activity in these neoplasms.

115

HAEMOCHROMATOSIS IN THE BLACK RHINOCEROS (*DICEROS BICORNIS MICHAELI*): ACQUIRED OR CONGENITAL?

M. Ruetten*, H.W. Steinmetz†, M. Clauss† and A. Pospischil*

*Veterinary Pathology, Zürich and †Clinic of Zoo Animals, Zürich, Switzerland

Introduction: Haemosiderosis in captive African black rhinos (*Diceros bicornis*) is relatively common, although the pathogenesis remains obscure.

Materials and Methods: Four African black rhinos aged 23 – 39 years from the Zürich Zoo were subject to necropsy examination due to poor body condition, old age or recumbency.

Results: From one animal a total of 17 blood samples were taken for biochemistry. Serum iron was high compared with values of free ranging animals, mean transferrin saturation was 90% (normal 28%) and mean ferritin was 6,046 ng/ml (normal 133ng/ml). Grossly, the animals were almost cachectic, with several decubitus skin ulcers overlying prominent bone structures. In one animal the small intestine was diffusely blackened. The liver was friable and red to dark brown. Histologically, the animals had heavy haemosiderin deposits in macrophages and parenchymal cells of the spleen, liver, bone marrow and lungs. The liver had extensive haemosiderin deposition in Kupffer cells, hepatocytes and biliary epithelium, and there was moderate bile duct proliferation but only minimal fibrosis. Aside from haemosiderin deposits, the bone marrow was hypocellular. In one animal, massive phagocytosed deposits in the lamina propria and villus tips of the small intestine were seen.

Conclusions: The distribution of histological lesions together with the clinical data suggests an enteric origin of excess iron, rather than recurring haemolytic anaemia or hereditary haemochromatosis.

114

IMMUNE-DEPLETION RELATED TO BOVINE VIRAL DIARRHOEA VIRUS IN A HEIFER WITH NATURALLY OCCURRING MUCOSAL DISEASE

M. Rondena*, V. Lorenzi*, D. Binanti*, D. Gelmetti†, D. Pravettoni†, M. Finazzi* and P. Riccaboni*

*DIPAV, †Department of Veterinary Clinics, University of Milan, Milan, Italy and ‡IZSLER, Milan, Italy

Introduction: Bovine viral diarrhoea virus (BVDV) induces mucosal disease (MD) in young persistently infected cattle. MD affects the gastrointestinal (GI) tract and lymphoid tissues; however, the pathogenesis of lymphoid lesions is still poorly understood.

Materials and Methods: Samples of different parts of the gastrointestinal tract, lymph nodes and spleen from nine naturally MD-infected heifers were collected during necropsy, processed for histology and immunolabelled with antibodies specific for BVDV, CD3, CD79a, MAC387, MHCII and HSP72 (heat shock protein 72).

Results: All animals had gross and microscopical lesions (mucosal ulcers, necrosis, vasculitis and intestinal crypt herniation) characteristic for MD. Lymphoid organs had follicular germinal centre necrosis and apoptosis with macrophage infiltration. Immunohistochemically, BVDV antigen was present only in GI epithelial cells. HSP72 was expressed by both mucosal epithelial cells and macrophages; macrophages were also MAC387⁺ and MHCII⁺. Rare residual CD79a⁺ B lymphocytes, surrounded by a few CD3⁺ T lymphocytes, were detected within germinal centres.

Conclusions: The presence of BVDV antigen with restriction to the epithelium, and the lack of reaction of lymphoid cells to BVDV antigen, suggested that immune depletion was mediated by up-regulation of pro-inflammatory cytokines, as previously reported in pigs infected with classical swine fever.

116

ESTABLISHMENT AND CHARACTERIZATION OF A NEW CELL LINE DERIVED FROM CANINE ANAPLASTIC MAMMARY CARCINOMA

S. Hiroki, L.D.R. Nakagawa, M. Yasuhiro, K. Atsushi, M. Mami, M. Takashi, M. Kouji, M. Toshiaki and Y. Tokuma

Gifu University, Gifu, Japan

Introduction: Canine anaplastic mammary carcinoma (CAMC) proliferates with diffuse infiltration. Surgical treatment is not effective and prognosis is poor. We established and characterized a new cell line (designated 2000MC) derived from CAMC.

Materials and Methods: 2000MC cells were derived from CAMC of a 10-year-old female Labrador retriever. Homogenized tumour tissue was placed into Dulbecco's minimal essential medium with 10% fetal calf serum. The cells were passaged over 100 serial generations. The expression and activity of matrix metalloproteinase (MMP)-2 and MMP-9 were determined by reverse transcriptase polymerase chain reaction (RT-PCR) and gelatin zymography (GZ). Migration of the 2000MC cells was analyzed using a migration assay kit.

Results: The 2000MC cells were polyhedral and weakly adherent to each other and the culture dish. Expression and activity of MMP-9 was detected by RT-PCR and GZ while MMP-2 was not identifiable. In the migration assay, 2000MC cells exhibited high activity, which was inhibited by MMP-9.

Conclusions: The 2000MC cell lines were highly infiltrative, similar to what is observed in spontaneous CAMC. The activity of MMP-9 appears to be predominantly associated with the infiltrative nature of these cells.