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Detection of cancer stem cells by immunohistochemistry of canine mammary neoplasias

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Background

Canine mammary neoplasias are very common and, in Brazil, 70% are considered malignant. Cancer stem cells (CSCs) are able to self-renew and have abilities to form metastases. In canine mammary tumors these CSCs were isolated by flow cytometry by means of the surface markers CD44+/CD24-. The aims of this study was detect these CSCs by immunohistochemical reactions and correlate them with degrees of canine mammary neoplasias.

Patients and methods

A total of 130 breast cancer samples were selected from the Unesp - Department of Pathology and classified according to [1]. These samples were composed of adenomas; metastasis, solid carcinoma grades II and III; tubular, papillar and mixed tumor carcinoma grades I, II and III. Immunohistochemical was performed with antibodies CD44 and CD24.

Results

A regression line by Pearson correlation test was performed. The value which CD44 is positive and CD24 becomes zero is 46.75%. From 130 samples, 40 showed the phenotype CD44+/CD24-Thirty seven was metastasis, grades II and III. The immunostainings for CD44 and CD24 antibodies were respectively 62.2% and 0%. In the literature, grade III are more correlated with CD44 than CD24. In studies by flow cytometry authors found percentages of CSCs similar to those found in this work.

Conclusion

The immunohistochemistry showed to be a reliable technique for detection CSCs in canine mammary neoplasias and correlates with grades II and III (poor prognosis).

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