

عنوان مقاله:

Canine Mammary Gland Cancer Stem Cell and its Potential Role in Malignant Biologic Behavior

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خلاصه مقاله:

BACKGROUND: Canine mammary gland cancers are the most prevalent malignancies in dogs. There are different challenges regarding management of these cancers in dogs and human, one hypothesis is related to small cellular subset of tumor mass called cancer stem cell. These cells are therapy resistant and cause metastasis and relapse even after primary successful treatment. The well-identified phenotypes for detecting this population are ALDH1+/CD44+/CD24-/Low biomarkers. **OBJECTIVES:** A study to evaluate existence of cancer stem cells in canine malignant mammary glands tumor and assess effects of these cells on clinicopathological parameters of tumors were designed. **METHODS:** In this study forty cases of canine mammary glands tumors were collected. All cases were tested via H&E and then Immunohistochemistry (IHC) methods. All samples were evaluated immunohistochemically for common markers of these tumor-initiating cells. Monoclonal antibodies against ALDH1, CD44 and CD24 were used. Some tumor aggressiveness-related parameters, including lymphovascular invasion, tumor grades and histotypes were assessed. **RESULTS:** The present study revealed that 17.5% of cases were enriched with cancer stem cells and all of them were diagnosed as grade II and III ($P \leq 0.05$). Other findings showed all cancer stem cell-positive cases were significantly lymphovascular invasion positive ($P \leq 0.05$). The most common histotypes in this research were tubular, tubulopapillary and intraductal carcinomas. **CONCLUSIONS:** Our results illustrated that cancer stem cells can be considered as reliable prognostic factors to predict severity of malignant behavior of canine malignant mammary glands cancer, which is comparable with human breast cancer.

کلمات کلیدی:

cancer, canine, Malignant Tumor, Mammary Glands, Stem Cells

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