ABSTRACTS
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Estrogen and progesterone receptors in different histopathological grades of canine mammary carcinomas

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OBJECTIVES AND METHODS: Mammary carcinoma (MC) is the most frequent malignant neoplasm in female dogs. Histological grading is strongly related to prognosis and it is currently used to direct dog patients to different adjuvant therapies (1). There is controversial information concerning the proportion estrogen receptor (ER) and progesterone receptor (PR) in canine MC. The relationship between the expression of the different receptors and the tumor histopathological grade (HG) has not been studied in this species. The aim of the present study was to evaluate the expression of ER-α, ER-β and PR in canine MC of different HG.

Thirty-seven bitches suffering from mammary adenocarcinoma (deferred biopsy) that were in clinical stages III (n=30) or IV (n=7) were included in this study.

After mastectomy tissue samples were histopathologically studied and graded (2,3). In cases with multiple tumors, the higher-grade malignant lesion was recorded. The histological grade of carcinomas was derived from the assessment of three morphological features (tubule formation, nuclear pleomorphism and mitotic counts), and each tumor was scored as 1-3. The scores were then added to obtain the tumor grade as follows: 3-5 points = well-differentiated (Grade I); 6-7 points = moderately differentiated (Grade II); and 8-9 points = poorly differentiated (Grade III; 3). Mammary tissue was also processed for immunohistochemical staining using specific ER-α, ER-β and PR antibodies.

Percentages of each hormone receptor in the different HG were compared by one way ANOVA followed by Tukey test. Spearman correlation test was carried out between hormone receptor and HG. The level of significancy was set at p < 0.05.

RESULTS: Histological studies revealed that 31 cases were simple and 6 were complex adenocarcinomas. Tumor histological grading was HG 1 (9 cases), HG 2 (13 cases) and HG 3 (15 cases). The percentage of ER-α, ER-β and PR expression for each HG were 24.4±11.3, 8±8.2, 17.4±6 (p>0.1) for HG1, 77.1±7, 57±7, 28±7.5 (p<0.01) for HG2, and 2±0.8, 11.8±5.9, 9.4±5.3 (p>0.1) for HG3. Correlation analyses between the percentage expression of each receptor and HG were -0.1 (p > 0.1), -0.64 (p < 0.01) and 0.13 (p > 0.1), for ER-α, ER-β and PR, respectively.

CONCLUSION: It is concluded that the expression of ER-α, PR did not vary in the different HG, although ER-β significantly decreased as HG augmented. ER-β would be useful as a prediction factor for treating canine mammary adenocarcinomas.