



Anna Letunovskaja
Vladimirovna, DVM,
postgraduate student

Department of Obstetrics
and Operative Surgery,
St. Petersburg State
Academy of Veterinary
medicine.
Russian Federation

anna-let@inbox.ru

SERUM CERULOPLASMIN OSCILLATION IN NON-INFLAMMATORY DISEASES OF MAMMARY GLAND IN DOGS

Introduction

This study is managed to elucidate the connection between activity of antioxidant system and oxidative stress produced by rapid growth of neoplastic tissues. Here we observe correlation between serum ceruloplasmin and neoplasia malignancy in dogs.

Material and methods

It serve the purpose of present research we investigated general and antioxidant conditions of 20 dogs with different stages of breast cancer and non-pathological objects. Serum was obtained from dogs of different breeds and age group of 7-13 years old, without associated inflammatory disease. We estimated serum ceruloplasmin concentration with electrophoretic method by Laemmli. Obtained data was converted to pixels sum and statistically evaluated. We had four groups: non-cancer diseases of mammary gland; high-, moderate- and low differentiated breast cancer.

Results

The data showed the dependence of serum ceruloplasmin from malignancy stage of breast cancer. Non-cancer and high-differentiated breast cancer processes had minimal ceruloplasmin serum oscillations, while low-differentiated – maximal (Table 1). All animals participated in this study were controlled by blood, ultrasonography and radiography to exclude associated pathology. This strict control is based on the fact that the ceruloplasmin is a protein of acute phase reaction and can be influenced by any other inflammatory process.

Table 1. The average serum ceruloplasmin concentration obtained in research (in pixels)

Group	M±m
Non-cancer (n=5)	8516±921
high-differentiated (n=5)	12899±1334
moderately-differentiated (n=5)	34600±4577
low-differentiated (n=5)	45432±5350

Conclusion

We defined connection between malignancy state of breast cancer affected mammary gland and serum ceruloplasmin concentration. Due to obtained information, we can propose method of non-invasive estimation. This indirect method will help veterinary doctors to obtain specific information about malignancy status, prognosis and operation risks.