

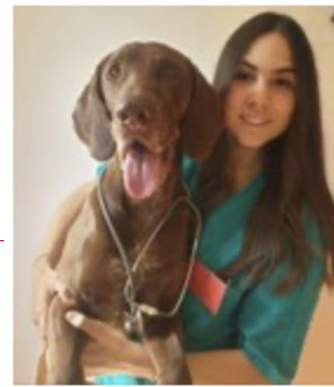
Dottorato di ricerca in Scienze Veterinarie [XXXVIII] CICLO - Anno di corso: [1°]

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Serum Lactate dehydrogenase (LDH) is a prognostic indicator in canine appendicular osteosarcoma

Objective

In human patients with osteosarcoma, increased serum lactate dehydrogenase (LDH) is strongly associated with a poor prognosis. To investigate whether elevated serum LDH resulted in shorter time to progression (TTP) and overall survival (OS) in dogs with appendicular OSA undergoing amputation and chemotherapy.

Results

On multivariable analysis, elevated ALP was significantly associated with an increased risk of tumor progression (HR: 6.21; 95% CI: 1.42-27.17; P=0.015), while high LDH activity was associated with an increased risk of death (HR: 4.15; 95% CI: 1.23-14.09; P=0.022).

Median TTP and OS of dogs with normal LDH (300 days, 95%CI: 105-495, and 387 days, 95% CI: 172-602, respectively) were significantly longer than that of those having high LDH (134 days, 95% CI: 108-160, P=0.038, and 169 days, 95% CI: 73-265, P=0.010, respectively). One-year survival rate was 50% for dogs with normal LDH and 9.1% for those with increased LDH.

Conclusions and Future Proposal

Serum LDH activity at diagnosis was significantly associated with OS in dogs with appendicular osteosarcoma. In view of its low cost and reproducibility, LDH could be introduced as a prognostic biomarker in clinical practice. These data need to be confirmed in prospective studies.

Materials and Methods

Medical records of three oncology centers were retrospectively searched for dogs with completely staged appendicular OSA, that were tested for serum LDH at diagnosis and underwent amputation and adjuvant carboplatin chemotherapy. Possible prognostic factors and high level of LDH serum were tested for influence on TTP and OS.

| TTP | | | 95,0% CI per Exp(B) | |
|-----|---------|---------|---------------------|-----------|
| | Sign | Exp (B) | Inferiore | Superiore |
| ALP | 0,015 * | 6,207 | 1,418 | 27,174 |
| LDH | 0,101 | 2,181 | 0,858 | 5,542 |

| OS | | | 95,0% CI per Exp(B) | |
|-----|---------|---------|---------------------|-----------|
| | Sign | Exp (B) | Inferiore | Superiore |
| ALP | 0,087 | 4,933 | 0,794 | 30,644 |
| LDH | 0,022 * | 4,154 | 1,225 | 10,335 |

