SOCIETÀ ITALIANA DELLE SCIENZE VETERINARIE

In collaborazione con:

Università degli Studi di Perugia
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IZS dell’Umbria e delle Marche

XII Convegno AIPVet

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ATTI DEL LXIX CONVEGNO SISVET

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Human patients with MM have short survival times associated with frequent complications such as thrombosis. Considering their life span, dogs with MM in comparison to humans, have a longer survival times. Hypercoagulable complications in canine MM are not known and prognostic factors linked to haemostasis have been not thoroughly investigated.

Aim of the study: a) to describe the haemostatic profile in dogs with MM at presentation, b) to assess whether coagulation parameters have a prognostic value, and c) to detect a possible hypercoagulable state.

Haemostatic abnormalities in dogs with MM (Group 1, #70) were evaluated via search of the electronic data-base (P.O.A System Plus 9.0) of the San Marco Veterinary Clinic, between 2002-2015. Dogs included in Group 1 met the criteria: bone marrow plasmacytosis (plasmacells ≥15%), osteolytic lesions, serum mono-biclonal gammopathy. All groups had a haemostatic panel taken at presentation. Two groups of dogs matched for age, breed, and sex were enrolled as case-control: healthy dogs (Group 2,#70) and dogs affected by various diseases (Group 3,#70). The analytes investigated were: Platelet count (PLT), activated Partial Thromboplastin Time (aPTT), Prothrombin Time (PT), Fibrinogen, Thrombin Time (TT), Fibrin-Fibrinogen Degradation Products (FPDs), D-Dimer and Antithrombin (AT). In addition, within the MM-dogs the haemostatic profile between bleeding (B-MM, #42) and non-bleeding (NB-MM, #28) dogs was evaluated. Statistical differences between groups was evaluated by Kruskal-Wallis test and post-test analysis were performed by Wilcoxon-Mann-Whitney. Risk to death within B-MM and NB-MM dogs was evaluated by Pearson’s X2 test. ROC curves were used to identify the best analyte to predict death. The significance level for all statistical test was set at p<0.05.

aPTT, PT and TT were significantly increased in Group 1 compared to Groups 2 and 3. PLT count and AT concentrations were significantly decreased in Group 1 compared to Group 2 and 3. Fibrinogen concentration was significantly decreased in Group 1 compare to Group 3, while no difference was present between Group 1 and 2. No difference were present between Groups 1 versus Group 2 and 3 for FDPs and D-dimer. PLT count and AT concentration were significantly decreased in B-MM compared to NB-MM; aPTT and PT were significantly increased in B-MM compared to NB-MM; finally, no differences between B-MM and NB-MM were present for TT, FDPs, D-Dimer. B-MM dogs showed lower mortality rate in respect to NB-MM patient (p<0.028). AT resulted the best haemostatic analyte in predicting death in dogs affected with MM (p<0.04; AUC 64%; 95% CI 0.50-0.78).

Primary and secondary haemostasis are highly compromised in dogs affected by MM while tertiary haemostasis appears to be not altered, suggesting that a hypercoagulable state, opposite to humans, is unlikely in dogs with MM. Surprisingly, in dogs with MM bleeding seems to have a protective effect against death. The best haemostatic assay to predict the mortality in canine MM at 90 days after the diagnosis is the AT.