INTRODUCTION

The Patnaik histological grade is the most commonly used prognostic indicator for canine cutaneous mast cell tumours. The majority of dogs with high histological grade tumours die from their disease after local therapy alone within a year of diagnosis, whereas most dogs with low grade tumours are cured with appropriate local treatment. The behaviour of intermediate grade mast cell tumours is more difficult to predict because they behave as low grade tumours in approximately 75% of cases and as high grade tumours in the remaining 25%. The differentiation of intermediate grade tumours with aggressive behaviour from the more benign forms represents a great diagnostic challenge. In the last few years a 2-tier histological grading system and the use of markers of cell proliferation such as mitotic index, Ki67 index and MCM7 score have been investigated to overcome this limitation. In one study, a new 2-tier histological grading system based on cellular morphology and mitotic activity was proven to be a better predictor of survival than the Patnaik grading scheme. This new system is currently awaiting validation in other studies. Mitotic index and Ki67 index have been significantly associated with survival independently from the tumour grade in multiple studies. Many diagnostic commercial laboratory routinely offer these prognostic markers to differentiate aggressive from non-aggressive intermediate grade MCTs. A preliminary study conducted by Berlato and colleagues1 evaluated MCM7 score as a novel marker in canine MCTs. MCM7 score was found to be completely independent from the histological grade and significantly associated with survival. Non-published results from this study might also suggest that MCM7 score is a more accurate prognostic marker compared with mitotic index and Ki67 index.

OBJECTIVE

The primary objective of the present study is to validate the MCM7 score as a prognostic marker in a different cohort of dogs with intermediate grade MCTs. The secondary objective is to compare the ability of the 2-tier histological grading system, mitotic index, Ki67 index and MCM7 score to predict survival of canine MCT.

MATERIALS AND METHODS

This is a retrospective study including samples of dogs with a histological diagnosis of intermediate grade cutaneous MCTs and known outcome. Samples were collected from the archive of the Diagnostic Laboratory of the Animal Health Trust. Follow up was obtained from the submitting veterinary practice sending a questionnaire or via phone call. For each sample the 2-tier histological grade, mitotic index, Ki67 index and MCM7 score is determined. Results are then analysed with statistical methods to determine the ability of each prognostic marker of predicting survival.

PLANNING AND DEADLINES

June 2013 – The recruitment of the cases is now completed. We managed to enrol 110 cases including 28 events. July 2013 – Laboratory work including histological grade, MI, Ki67 and MCM7. October 2013 – Statistical analysis, interpretation of the data and preparation of the manuscript.

MANUSCRIPT ACCEPTED FOR PUBLICATION


ORAL PRESENTATION