Accuracy of inflammation field tests in cattle practice

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ABSTRACT

Fast evaluation of inflammation status is important in bovine patients to establish diagnosis, prognosis and to adapt treatments. Field-tests are particularly encouraged. The aim of the study was to compare side-cow tests, with laboratory assays in order to determine whether they have a good diagnosis and prognosis value on inflammation.

Fifty-two adult bovine, with clinical evidence of disease, in acute (A) or chronic (C) phase, and previously treated (NSAID+) or not (NSAID-) with non-steroidal anti-inflammatory drugs, were sampled. Survival of animals at 2 months was noticed. Directly on the field, total protein in serum (TPS) and plasma (TPP) were measured with a refractometer, fibrinogen concentration was estimated (TPP-TPS) as well as PP:F ratio [TPP-(TPP-TPS)/(TPP-TPS)], and Glutal-test was performed. Fibrinogen, haptoglobin and haematology were determined in laboratory. Blood parameters were compared between groups (A/C, NSAID+/-, Survival-Yes/No). Haptoglobin was considered as the reference for inflammation diagnosis. Chi^2-test and ROC-curves, using evidence-based threshold, compared haptoglobin with field tests, as well as all parameters with survival.

Each parameter taken separately, there was no significant difference ($p>0.1$) between A/C, and NSAID+/- groups. There was no significant relationship between survival and inflammation field test ($p>0.1$). When compared to haptoglobin, inflammation field tests were significantly correlated ($p<0.05$). Sensitivity, specificity and Youden were respectively 100%, 67%, 0.67 for Glutal; 72%, 83%, 0.55 for TPP-TPS; 61%, 83%, 0.44 for PP:F.

Field tests are able to diagnose inflammation; however, they have no prognosis value. Further studies are needed to investigate more inflammatory markers.