Accuracy of inflammation field tests in cattle practice

Hugues Guyot, Guillaume Lamain, Johanne Detilleux, Eve Ramery

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. Chi²-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.