

A-34 Acute phase protein response in the buffalo following infection with *P.multocida*

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Acute phase proteins (APPs) are a group of liver-derived, serum proteins which alter in concentration in response to infection, injury or an inflammatory process. In human and veterinary medicine, APPs have proved to be useful markers for detecting inflammatory diseases. APPs in animals vary with species. In this study, we have examined the haptoglobin (Hp) and alpha-2 acid glycoprotein (AGP) responses in the buffalo, an important domesticated ruminant in Asia and a species in which there is no information on APPs.

Seven, 3-5 month old, Lanka buffalo calves of either sex weighing 45-60 kg were used in this study. An acute phase response was induced in 5 animals following intranasal inoculation of *P. multocida* serotype B:2 (approx. 10^9 viable organisms), 2 animals given phosphate buffered saline by the same route served as controls. Jugular blood was collected immediately before infection and at 6, 12, 24, 36, 48, 60, 72, 96 and 120 h post-infection. Serum Hp was assayed in an auto analyser (Cobas mira; Roche) while the AGP was measured using a commercial kit (Saikin Kagaku Inst. Japan) based on radial immunodiffusion in which anti-bovine AGP is incorporated into the agarose gel.

In the infected buffalo calves, there was a rise in Hp from baseline values of 0.78 ± 0.14 g/l (mean \pm sd) to reach a 2 fold increase by 24 h followed by a 5-fold increase on day 5, post-infection. Changes in AGP were apparent only after 48 h when a 2-fold increase was observed and this was followed by a 3-fold increase on day 5, post-infection.

There were no detectable alterations in Hp and AGP levels in the controls. This study has demonstrated that (a) both Hp and AGP are acute phase proteins in this species; (b) baseline values of haptoglobin in the buffalo (0.78 g/l) is higher than that reported for sheep and cattle (<0.2 g/l) and (c) anti-bovine AGP cross-reacts with buffalo AGP.

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