Clinical and haematological alterations in foot and mouth disease virus naturally-infected domestic water buffaloes in Vietnam

BACKGROUND
Buffaloes—high value live stock animals but vulnerable to FMD

OBJECTIVE
1) To identify clinical symptoms in FMDV-infected buffaloes.
2) To identify alterations in haematology of FMDV-infected buffaloes.
3) To identify alterations in some blood chemical parameters of FMDV-infected buffaloes.

METHODS
- FMDV-infected buffaloes were confirmed by both clinical examination and RT-PCR using primers: FMDV-VPI/CACTCTCCTCGATGTT and FMDV-AS1F: GCGCTTNYGCAACACACCGHC. To detect the virus in swab samples.
- Blood samples were collected from jugular veins from 30 infected animals (20 female and 10 male buffaloes) ranging from 2 to 5 years old during an acute onset of FMD.
- Haematology and blood chemistry were identified by using a 32-parameter hematology analyzer - Pentra 400I. Statistical analysis was done using GraphPad Prism® version 5.0 software (California, USA). One-way analysis of variance (ANOVA) followed by Newman–Keuls post hoc test was used to compare data sets between healthy and infected buffaloes. Statistically significant at a value of p < 0.05.

RESULTS

RESULTS (continued)

CONCLUSIONS
1) 100% of FMDV-infected buffaloes manifested with typical symptoms including: high fever, slobbering and smacking lips, vesicles on the tongue and sores on feet. In addition, heart rate and respiratory rate also increased significantly compared to healthy animals.
2) Haematology of the infected buffaloes was altered obviously. Proportion of lymphocytes increased sharply while there were significant drop in all of other white blood cell counts. Red blood cells was also altered obviously in some parameters. Cell counts, hematocrit, mean corpuscular hemoglobin concentration (MCHC) and red cell distribution width (RDW) were increased significantly, while mean corpuscular hemoglobin (MCH) and mean corpuscular volume (MCV) and mean corpuscular Hemoglobin (MCH) decreased obviously.
3) AST and ALT of the infected buffaloes were also increased significantly, while blood creatinine remained stable.