



Cardiac Troponin I activity compared with other cardiac markers (LDH, CK and AST) in the early lactation and dry period in dairy cattle

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Objectives: Early and accurate identification of myocardial injury may be important for the diagnosis, and treatment of cattle with primary or secondary myocardial diseases. In clinical medicine, numerous serum biomarkers are used, or proposed for use, in the diagnosis of myocardial injury. Only CK-MB, cTnI, cTnT, myoglobin, and LDH have achieved wide clinical acceptance for myocardial injury including: myocarditis, pericarditis, sepsis, heart contusion and drug-induced myocardial damage. Cardiac troponin is the gold- standard biomarker of myocardial injury in humans because of its high tissue specificity, diagnostic sensitivity, low basal blood concentration, rapid release, and persistence in the blood.

Materials & Methods: In one dairy cattle farm under reasonably good management, 20 healthy high productions and 20 healthy low production cattle were selected. A thorough clinical examination, TPR and special examination of the heart including auscultation; observation of jugular vein and ECG recording were conducted in all cows. Blood samples were collected from the coccygeal vein from all cows in the middle of dry period, one week after parturition and in the peak of the lactation, almost 70 days after parturition. Sera were separated from all samples and biochemical parameters (cTnI, CK, AST and LDH) analyzed using conventional laboratory methods.

Results & Conclusion: Statistical analyses indicated that; there were no significant differences in serum levels of CK, LDH and AST between high and low milk production cows in different times. In details, the serum levels of CK in the peak of the lactation were significantly higher than 1st week after calving in low milk production group but there were no significant changes in different times in high production group. There were no significant changes in serum cTnI between high and low milk production groups in different times of sampling. The serum levels of cTnI in the middle of dry period in low milk production group were significantly higher than this time in high milk production group but there were not any differences in other times in two groups. cTnI, are very low or below the level of detectability of most assays in normal animals and humans. As there is a need for constant monitoring of the described parameters during production, we need the reference ranges of these parameters, especially cTnI which have recently been suggested as a useful ancillary test to detect myocardial diseases. Further studies are needed to evaluate the diagnostic benefit of cTnI analysis in cattle with naturally occurring heart disease.

Keywords: dairy cattle, cTnI, cardiac biomarker

Detection of Small Ruminant Lentiviruses in sheep populations of Khorasan Razavi province by ELISA

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Objectives: Now, Maedi-visna virus and Caprine arthritis -encephalitis are known as of Small Ruminant Lentiviruses (SRLV). Both of them cause chronic diseases in small ruminants. In sheep, Maedi-visna virus cause a disease as the same name. In these animals, sheep and goat are the main reservoirs of infection for the disease. This research is the first study on the seroepidemiology of Maedi-visna disease in sheep populations of Khorasan Razavi province.

Materials & Methods: 220 head of sheep from 30 herds in 12 counties were selected by multi-stage cluster random sampling. Sera were assayed for antibody against Maedi-visna virus/ Caprine arthritis - encephalitis.

Results & Conclusion: Seroprevalence of infection in sheep was 34.5% (95% CI: 28.3 - 40.7%). In all studied counties, the infection were detected in the range of 6.7 - 72.2 %. In 26 (89.6%; 95%CI: 74.4 - 98.8%) sheep flocks at least one seropositive case was detected. The relationship between age, sex, flock size and breeds of sheep were statistically analyzed. In logistic regression model, only age was correlated with SRLV seroprevalence (P<0.05). It seems, because of some points such as difficulty clinical diagnosis, chronic course of the disease, absence of effective vaccine and treatment and huge economic damage, more epidemiological studies and explanation of prevention and control strategies for the disease are necessary. This study showed relatively high seroprevalence against SRLV in sheep population in this province.

Keywords: Seroepidemiology, small ruminant lentiviruses, sheep, Khorasan Razavi, ELISA