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Serum biochemical profile study on septic and puerperal metritis in Iraqi cows.

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Abstract

This study was conducted on 36 Iraqi cows out of 83 suffered from septic metritis (12 cows), puerperal metritis (12 cows)and (12 cows) represented control group (without problems) in Babylon and Baghdad province during the period November 2015 to May 2016 .This ages ranged between 3-6 years. These animals were divided into three equal groups according to reproductive problems (septic, puerperal, and healthy). The results observed in this study is no significant difference $p<0.05$ related with total protein in different group , while the significant increase $p<0.05$ (glucose and calcium) related with animals which suffered from septic and puerperal metritis compared with control group but blood urea nitrogen and creatinine recorded increased significant $p<0.01$ with uterine defect . It was concluded that in postpartum metritis recorded in glucose (hypoglycemia) and calcium (hypocalcemia, while total protein no effect, but creatinine and BUN recorded increased compared with control group.

Keywords: Septic metritis, puerperal metritis, Iraqi cows, Biochemical profile.

Introduction

Many authors was reported that they relationship between serum biochemical profile and postpartum metritis (1, 5). Metritis is a systemic reaction of the early postpartum period that is characterized by watery uterine discharge, initial fever, often accompanied by an atonic, reduced milk yield and the other clinical symptoms may connect with toxemia (2,3), but the clinical signs can range from per acute so called puerperal metritis to sever cases in which the systemic reaction with high fever and septicemia so called septic metritis (4). Magnus & Lali (1) found that glucose and calcium was below the normal level and cattle exhibit hypocalcemia and hypoglycemia , while the total protein and blood urea nitrogen and creatinine not variation .Mandali et al(6) and Beagley et al (7) observed low level of serum calcium and glycose in cattle and buffalo affected with retention of fetal membranes , The purpose of present study to analyze the serum biochemical parameters include metabolites and Ions of local Iraqi cows with postpartum septic and puerperal metritis.

Materials and Methods

This study was conducted on 36 out of 83 local Iraqi cows, aged between 3-6 years in Baghdad and Babylon province , these divided into three group, 1st group (12 cows) suffered from septic metritis, 2nd group(12cows) suffered from puerperal metritis and 3rd group represented control group(without uterine defect), All cases diagnosed clinically by rectal palpation. Blood sample were collected from Jugular vein before any treatment. We tested biochemical composition by analysis (metabolite and Ions).

Metabolite involve total protein, creatinine and blood urea nitrogen ratio by using kits (Japan) and all biochemical composition analysis by photometer 5010 (1, 8).

Results and Discussion

The results observed in table -1- that the total protein was not recoded significant differences ($p<0.05$) between all group and there finding agreement with (1,5), while the creatinine recorded highly significantly $p<0.05$ between septic and other group (puerperal and control) and these results agreement with Majeed et al (9) and Ahmed et al (10) as well as recorded superior significantly $p<0.05$ with blood urea nitrogen in septic and puerperal metritis compared with control group and these results agreement with Zaman et al (11) and Magnus & Lali (1).Ions include calcium and glucose showed in table -2- recorded significant differences $p<0.05$ in septic & puerperal metritis compared with control and the infected cows exhibited hypocalcemia and hypoglycemia and this finding agree with (1,5).

Table -1- Septic, puerperal metritis (Metabolites) in local Iraqi cows.

No.	Metabolites	Septic metritis M±SE	Puerperal metritis M±SE	Control M±SE	Normal range*
1	Total protein (g/dl)	7.26±0.43a	6.57±0.32a	6.14±0.13a	5.7-8.1(g/dl)
2	Creatinine (mg/dl)	2.06±0.15a	1.70±0.18b	1.60±0.12b	1-2 (mg/dl)
3	Urea-Nitrogen Ratio(mg/dl)	29.2±0.06a	28.1±0.06a	24.2±0.14b	6-27(mg/dl)

Different Letters mean Sig. differences $p<0.01$.
*Normal range according to Radostitis et al (2000)

Table -2 - serum (Ions) of Septic & puerperal metritis in local Iraqi cow.

No.	Ions	Septic metritis M±SE	Puerperal metritis M±SE	Control M±SE	Normal range*
1	Calcium	6.2±0.63a	6.8±0,52a	10.6±034b	9.7-12.4(mg/dl)
2	Glucose	28.4±3.27b	28.4±3.27b	56.4±4.58c	45-75(mg/dl

Different Letters mean Sig. differences $p<0.01$.
*Normal range according to Radostitis et al (2000).

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