THE EFFECT OF PREGNANCY ON SOME PHYSIOLOGICAL PARAMETERS OF IRAQI SHE CAMELS IN COMPARESSION WITH MALES AND FEMALES IN ESTERUS PHASE

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Keywords; camels , pregnancy , blood parameters

(Received 5 June 2011, Accepted 10 July 2011)

ABSTRACT

This study was carried out to determine the effect of pregnancy on some physiological parameters in Iraqi She camels in comparative with males and females in estrus phase , sixty (60) camel blood samples were taken from AL-Najaf Slaughter house , twenty (20) blood samples for pregnant She camels , twenty (20) blood samples for females in estrus phase and twenty (20) blood samples for males to study the following parameters , Red blood cells count , hemoglobin concentration and packed cells volume and blood indices which are include mean corpuscular volume , mean corpuscular hemoglobin and mean corpuscular hemoglobin concentration The grossly examination of ovary was used to determine the estrus phase for non – pregnant females . The electronic methods by beck man coulter were used to measure the studded parameters , The results revealed a significant decrease ($P \leq 0.05$) in blood parameters which are included RBCS count , Hb concentration and PCV% during pregnancy .

Whereas no significant changes ($P \geq 0.05$) in the blood indices values. There was decreased during dehydration and return to normal during rehydration , Which don't take place in any group of this study .

INTRODUCTION

There are some physiological adaptations which take place in camel like its capacity to store both energy and water , camels tolerate dehydration , have ability to lower their resting metabolism . (1) .

In camelids nearly all pregnancies occur in the left horn , the presence of the corpus lutum of pregnancy does not completely prevent growth and development of Graufian follicles . (2) .

Elias (**3**) determined the peripheral blood levels of progesterone about 1.0 ng/ml in pregnant females in the last stage of pregnancy , the level of progesterone never exceeded 0.55 ng/ml in non pregnant camels , and this hormonal variation may have an effect on blood picture , therefore this study was done to investigate the effect of pregnancy on some hematological parameters in comparative with females in estrus and males .

MATERIALS AND METHODS

1- Animals and Blood sampling

The blood samples , were taken from Slaughter house of AL-Nagif which include , 20 pregnant female , 20 females in esterus and 20 males .

2- Blood parameters :-

Blood parameters which are include Red blood cells count , hemoglobin concentration , packed cell volume , Mean corpuscular volume , Mean corpuscular hemoglobin and mean corpuscular hemoglobin concentration were done by electronic methods using coulter (Beckman / France) (4).

3- Diagnosis of pregnancy and estrus phase in females :-

This done by grossly examination of uterus and ovaries in the carcasses of Slaughtered females .

4- Statistical analysis :-

Statistical package for social Science (SPSS) System , was used to analyze the data of this study .

RESULTS AND DISCUSSION

1- **Red blood cells count , hemoglobin concentration and packed cell volume**

The table (1) show the values of RBCs count , Hb concentration and PCV% in pregnant she camels in compression with females in estrus phase and males . A significant decrease ($P \leq 0.05$) in all these parameters in pregnant females in comparession with females in estrus and males were noticed , The normal values of blood parameters in camel were RBCs count is 20×10^6 cell / μm , Hb 13.1 g/dl and PCV ; 2 g . 2% (1) , and this decrease may be due to reduce hemopoiesis as a result of disorder in production and secretion of erythropotien , which lead to reduce the physiological role . (5) , or may be due to decrease of eryrthropotien production due to disorder in cellular division , which effect on erythrocytes development and appearance of large number of immature erythrocytes (6) .Iron deficiency plays an important role in reducing of those parameters which may be due to increase iron consumption during pregnancy by reticuloendothelial system (7) .

The plasma iron decrease during pregnancy , acompined with increase ability of iron binding to increase B1 – globulin transferring . (8) .

Feldman(4) , reported that decrease of these parameters may be due hemodilution during pregnancy , because increase of blood volume in pregnant female , come from plasma more than from cells .Blood parameters of pregnant she camels were compared with those of female at estrus and male ,the former group was found to have low significantly($P \leq 0.05$) values of RBCs ,PCV% and Hb .Also increased progesterone levels during pregnancy cause a water and body fluids retention leading to increase of plasma volume which reflect the decrease of these hematological parameters (9) .

2- **Blood indices**

Table (2) show that there was not significant changes ($P \leq 0.05$) in mean corpuscular values which are include mean corpuscular volume (MCV) , Mean corpuscular hemoglobin (MCH) and Mean corpuscular hemoglobin concentration (MCHC) , The normal values of these indices for Arabian camel are MCV 28.5 Mm , after dehydration the MCV declined due to shrinkage of the RBC that is increased after rehydration due to the swelling of the RBC (4).

The values of MCH of camels was low 15.5 pg . This may be due to a large number of small red cells . camels have MCHC about 44 g/dl . There was not changes in these parameters because they decline during dehydration which was not found in our study (1) , Mean corpuscular values are utilized to classify anemia's morphologically (10) , In anemic conditions , alteration in the average size of red cells (MCV) may be paralleled by similar changes in the MCH and often MCHC (4) .

There is not evidence that pregnancy effect or these parameters .

Table (1)**The effect of pregnancy on blood parameters**

parameters	Pregnant females	Females in estrus phase	Males
RBCs count $\times 10^{6\ Cell} / \mu m$	b 7.79 ± 0.41	a 10.8 ± 0.09	a 10.2 ± 0.32
Hb (g/dl)	b 11.5 ± 0.48	a 13.2 ± 0.30	a 12.9 ± 0.34
PCV%	b 26.4 ± 1.69	a 29.5 ± 1.26	a 30.1 ± 0.85

- Number of animals = 20 for each group .
- The numbers = mean ± S.E
- The different litters = significant differences ($P \leq 0.05$) .

Table (2)The effect of pregnancy on blood indices

parameters	Pregnant females	Females in estrus phase	Males
MCV(fl)	28.4 ± 0.29	27.9 ± 0.16	28.2 ± 0.41
MCH(pg)	15.8 ± 1.51	15.3 ± 0.70	a 14.9 ± 1.07
MCHC(g/dl)	54.2 ± 1.25	53.9 ± 1.59	55.1 ± 0.52

- number of animals = 20 for each group .
- the numbers = mean ± S.E .
- There is no significant changes ($P \geq 0.05$) between groups .

دراسة تأثير الحمل في بعض المعايير الفسلجية للنوق العراقية مقارنة مع الجمال والنوق في طور الشبق

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الخلاصة

أجريت هذهِ الدراسة لمعرفة مدى تأثير الحمل في بعض الصفات الفسلجية للنوق العراقية بالمقارنة مع ذكور الجمال والنوق في طور الشبق ، ولتحقيق هذا الهدف تم الحصول على ستين (٦٠) عينة دم من مجزرة النجف عشرون (٢٠) عينة لنوق حوامل وعشرون (٢٠) عينة لنوق في طور الشبق وعشرون (٢٠) عينة لجمال ذكور لغرض دراسة المعايير التالية ، العدد الكلي لخلايا الدم الحمر ، تركيز الهيموكلوبين ، حجم خلايا الدم المرصوص وكذلك الدلائل الدمية والتي شملت معدل حجم الكريه الحمراء ، معدل هيموكلوبين الكريه الحمراء ومعدل تركيز الهيموكلوبين في الكريات الحمر.

أستخدم الفحص العياني للمبيض لغرض تحديد طور الشبق للنوق غير الحوامل.

استخدمت الطرق الالكترونية الحديثة باستخدام جهاز Beckman لغرض قياس المعايير والدلائل الدمية التي ذكرت سابقاً.

أظهرت النتائج انخفاضاً معنوياً ($P \leq 0.05$) في معايير الدم التي شملت العدد الكلي لخلايا الدم الحمر وتركيز الهيموكلوبين و حجم خلايا الدم المرصوص والذي قد يكون بسبب قلة إنتاج خلايا الدم الحمر الذي قد يأتي من خلل في إنتاج وإفراز هرمون الايرثروبويدكن مما يقلل من دوره الفسلجي أو خللاً في انقسام الخلايا المسؤولة عن إنتاج هذا الهرمون كذلك قد يكون السبب هو قلة الحديد الذي يزداد استهلاكهُ من قبل الجهاز الشبكي البطاني إثناء الحمل.

إما الدلائل الدمية التي شملت معدل حجم الكريه الحمراء ومعدل هيموكلوبين الكريه الحمراء ومعدل تركيز الهيموكلوبين في الكريات الحمراء فلم نلاحظ أية فروق معنوية ($P \geq 0.05$) بين المجاميع المستخدمة في الدراسة وذلك لان هذهِ المعايير تنخفض عادة في الجمال أثناء الجفاف وترجع إلى معدلاتها الطبيعية عند زوال هذا العامل ، الأمر الذي لم يكن موجوداً في أي من مجاميع التجربة.

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