Graduation Project
10901521

EFFECT OF CUPPING ON BLOOD PARAMETERS AND CORTISONE

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peace

Abstract

- Despite cupping have been used in veterinary medicine, recently still very few, However , it has much holistic effect on physical tension and physical pain.cupping has ability of stimulating the inner organs of body for regenerate and heal themselves.
- in the recent years, World Health Organization (WHO) has supported this practice of Traditional and Complementary (TCM) due to its wide health benefit, safety and minimal side effects comparing to chemical agents.
- In this study cupping therapy was effective, simple and of economic treatment. cupping, puncturing and cupping (CPC) method which includes six short simple steps: marking skin, sterilization, first cupping, puncturing, second cupping and sterilization.
- Equine laminitis is a crippling disease in which there is a failure of attachment of the epidermal laminae connected to the hoof wall from the dermal laminae attached to the distal phalanx occured by venous passive congestion. Because the laminae are responsible for suspending the distal phalanx within the hoof wall. Laminitis results in sever pain and disability which is common and sever disease affecting all breeds of horses.
- We have made it our goal to help equine achieve physical well-being and reach their greatest possible peak performance.In our research we uses local Donkey undergo cross-over design.
- The hypothesis is will carried out to determine the effects of dry cupping therapy (Al-hijama) on the haematological and the biochemical parameters in the healthy Donkey.
- However,For Monocyte ,esinophile , Basophils , PLT and RBC indices "MCV- MCH - MCHC have no significant diffference in period 1+2+3..

Overview

- Introduction
- Materials and Methods
- Results
- Discussion
- Conclusion
- Recommendation

1-Introduction

Introduction

1.1 Laminitis

- is an inflammation of the lamina of the hoof wall Commonly occur in equine family horses ,donkeys, mules.

- The disease process involves a breakdown of the bond between the hoof wall and the distal phalanx, commonly called the coffin bone, or third phalanx.

Introduction

1.1 Laminitis

- Laminitis (founder) occurs due to a lack of blood flow in the laminae , leading to passive congestion of the lamina , which produces swelling and inflammation in the hoof.

- the disease known **as severe pedal infection** in Which the **Ischemic**, **enzymatic**, **metabolic** and **inflammatory** mechanisms are connected to the development of laminar lesions , which often determines serious complications such as rotation of the distal phalanx and even the loss of hoof.

Introduction

- However, few therapeutic measures are effective to prevent or control the severity of acute laminitis

- Recently, the complementary therapies such as cupping and acupuncture are being used in veterinary medicine.

- Cupping will be discussed In this study to evaluate the effect of cupping therapy (known as **Hijama**) in the laminitis.

Introduction

1.2 History of cupping

- The first reported usages are found in the Islamic culture, As a result, wet cupping has remained a popular remedy practiced in many parts of the Muslim world.

- Cupping is poorly supported by scientific evidence , with a 2014 review of recent evidence finding that because of the unreasonable design and poor research quality, the clinical evidence of cupping therapy is very low.

Introduction

1.2 History of cupping

- A 2011 review found that "the effectiveness of cupping is currently indistinct for most conditions, and that systematic reviews showing efficacy for the treatment of pain were based mostly on poor quality primary studies.

- In their 2008 book *Trick or Treatment* , Simon singh and Edzard Enrst write that no evidence exists of any beneficial effects of cupping for any medical condition.

Introduction

1.3 The Cupping

- Cupping therapy is considered as one of the conventional methods of treatment that are commonly used in Asian and Middle East countries Some resources mentioned that cupping has been used in some countries such as Egypt and China since more than 2000 years .

- in which The cupping process involves using a cup and a suction system that is used to remove the air that is present in the cup which causes negative pressure inside the cup that draws the skin and the subcutaneous tissues.

Introduction

1.3 The Cupping

- In this study cupping therapy was effective, simple and of economic treatment. cupping, puncturing and cupping method which includes six short simple steps:-

- ✓ Marking skin.
- ✓ Sterilization.
- ✓ First cupping.
- ✓ Puncturing.
- ✓ Second cupping
- ✓ Sterilization.

2-Materials and methods:

- **Ethical approval**

  This project was approved to be applied by veterinary medicine department in An-Najah National University in Palestine for research purposes.

Materials and methods

2.1 Animal

- Animals In this study, three healthy donkeys undergo cross-over design, weight 100kg ±, age 4± years were obtained. (five jennies), which owned by farm of An-Najah National University were selected.

- This study have done during last October and November 2019. All animals were fed on straw and barley. And stored in optimal conditions with good care in free stall, in the farm of An-Najah University.

- All study technique and processes were done by students and under supervision of their supervisor.

Materials and methods

2.1 Animal

- Preparation of animal

- The middle third of neck at the left and right side had been shaved and surgically prepared. Under aseptic condition indwelling and fixation of jugular catheter applied.

- 10×10 cm area over the left and right scapula as well as left and right rump had been shaved, surgically prepared for application of dry cupping.

Preparation of Animal

Materials and methods

2.2 Cupping Technique

- 2.2.1 Determination of the cupping area

- Four sites had been relied on the body of each donkey to apply cupping technique.

- The first two points were located over the scapular region (left & right) sides. The second two points were located in the rump area, posterior-dorsal with correspond to sacral vertebrates.

Materials and methods

2.2 Cupping Technique

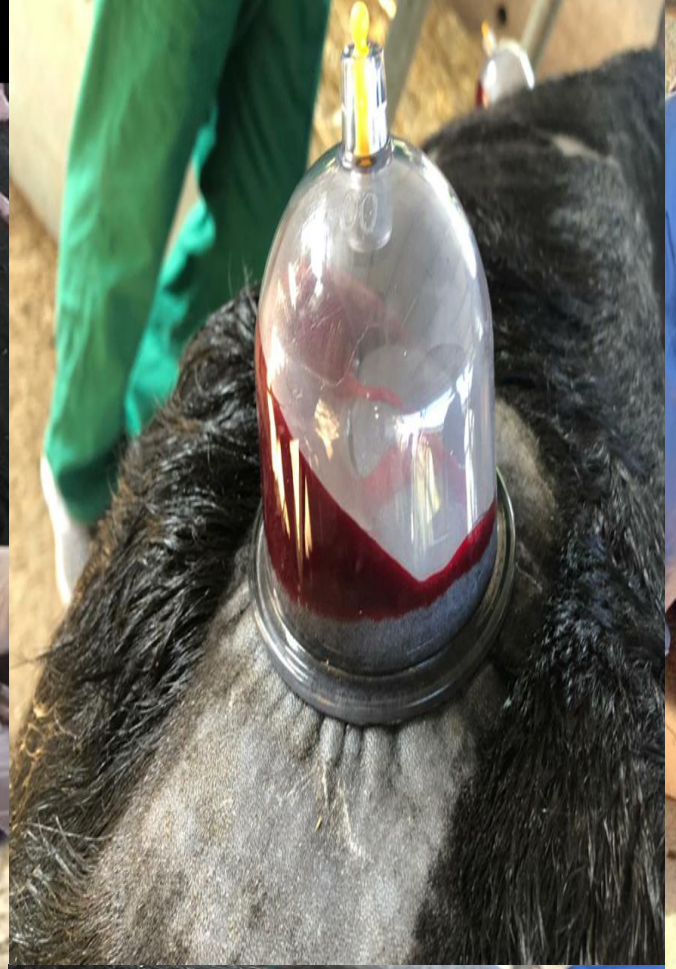
- 2.2.2 Cupping procedure

- The cups had been applied and fixed using vacuum machine at the mentioned four areas. leaved for 5 minutes, and all the cups had been removed, and superficial scarification had been applied over the circular dome which performed by cups using surgical blades.

- Immediately; the cups replaced to it's previous positions, and pumped up.

- Two types of blood tubes has been used for blood collection one EDTA and the other is Trace. HR, RR was measured and recorded at every venous blood collection. For accurate results, the procedure follow organized schedule by time for each step.



Materials and methods

2.3 Blood Sampling

- 2.3.1 Venous blood

- Venous blood samples is collected from jugular vein 5 min before cupping (baseline), and during cupping (period 1) (5,10,15,20) min during cupping time, then at the 3rd day after cupping (period 2), and two weeks after cupping (period 3).

- Serum and plasma had been obtained, sealed, and stored at -18C° for Hematological and Biochemical analysis.

Materials and methods

2.3 Blood Sampling

- 2.3.2 Cupps blood

- The blood had been collected from each cups, which distributed in all four points (10, 15) min after scarification.

Materials and methods

2.3 Blood Sampling

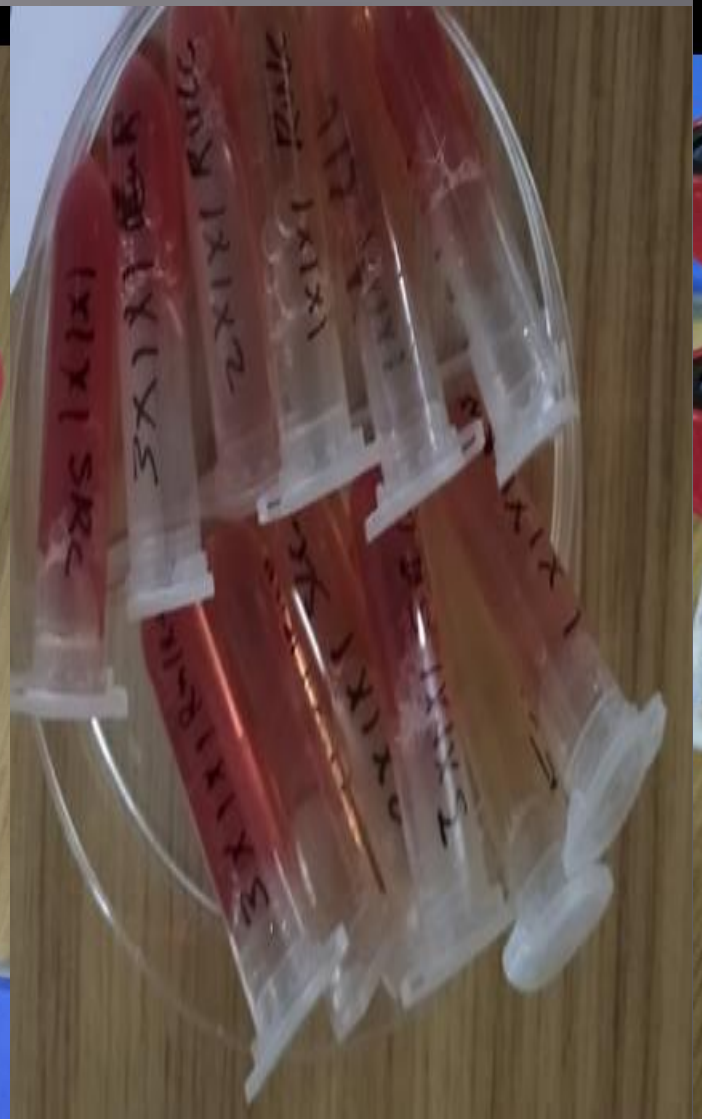
- 2.3.3 Serum

- serum had been obtained sealed and stored for biochemical analysis.

- All blood samples which collected in EDTA tubes undergo CBC examination through ( ).

- All serum samples were used to measure cortisone level by using ELISA technique.

Blood Sampling



Materials and methods

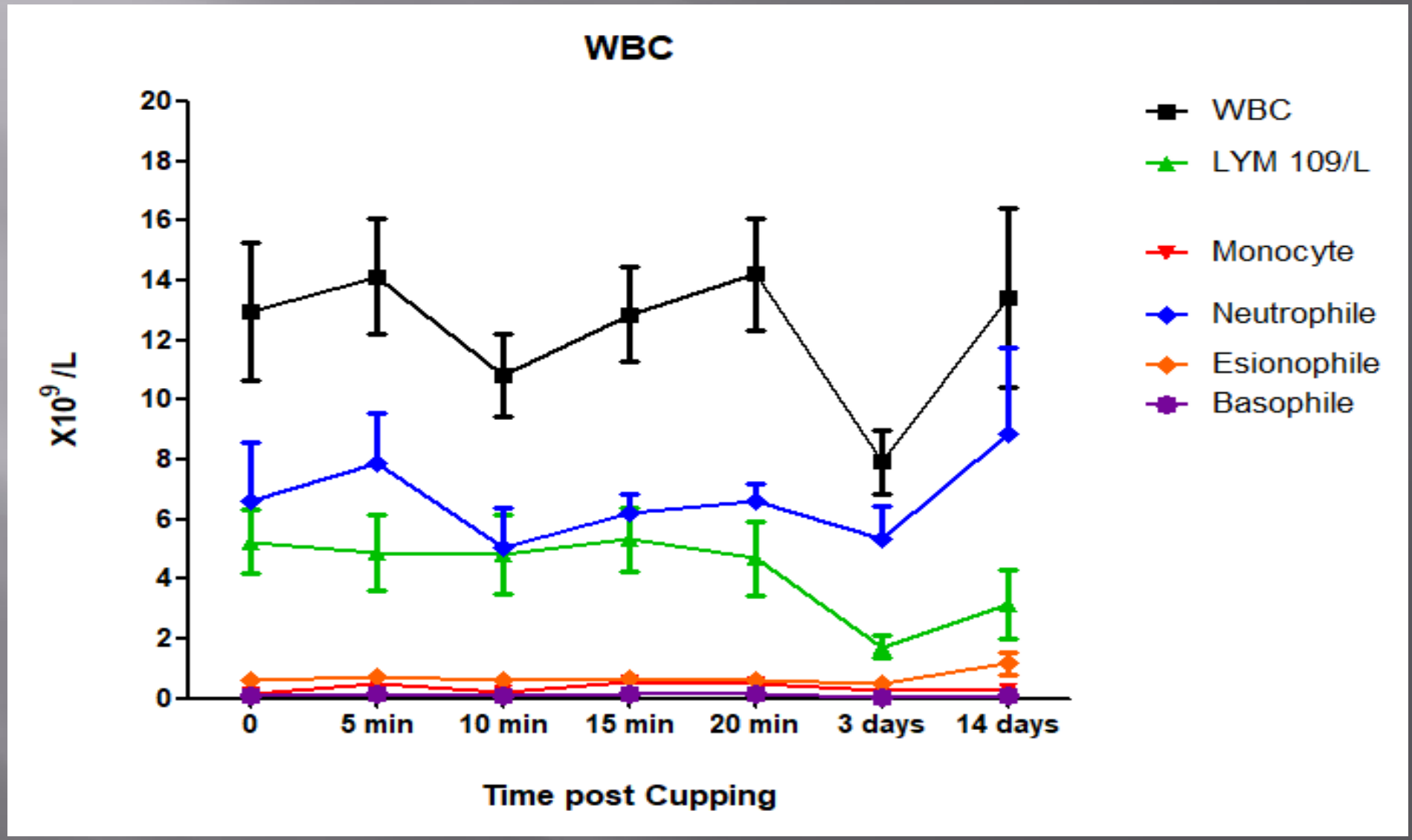
2.4 Statistical analysis

- Data were analyzed using SPSS , Haematological parameters cupping groups were analyzed by student t-test. P value .

3- Results

- The obtained results of the hematological and biochemical analysis before and after the dry cupping therapy (Hijama) are summarized in Figures.
- Evaluation of blood sample in several intervals which had been collected during first before cupping , during cupping (period 1) , 3day after cupping (period 2) and 2 weeks after cupping(period 3) .
- in which the observer observed improvements in the general condition of the horses

3.1 WBC Information



Result

- No statistically significant differences (P value > 0.05) were observed in **Monocyte** , **Esinophile** , **Basophils** during all three period.

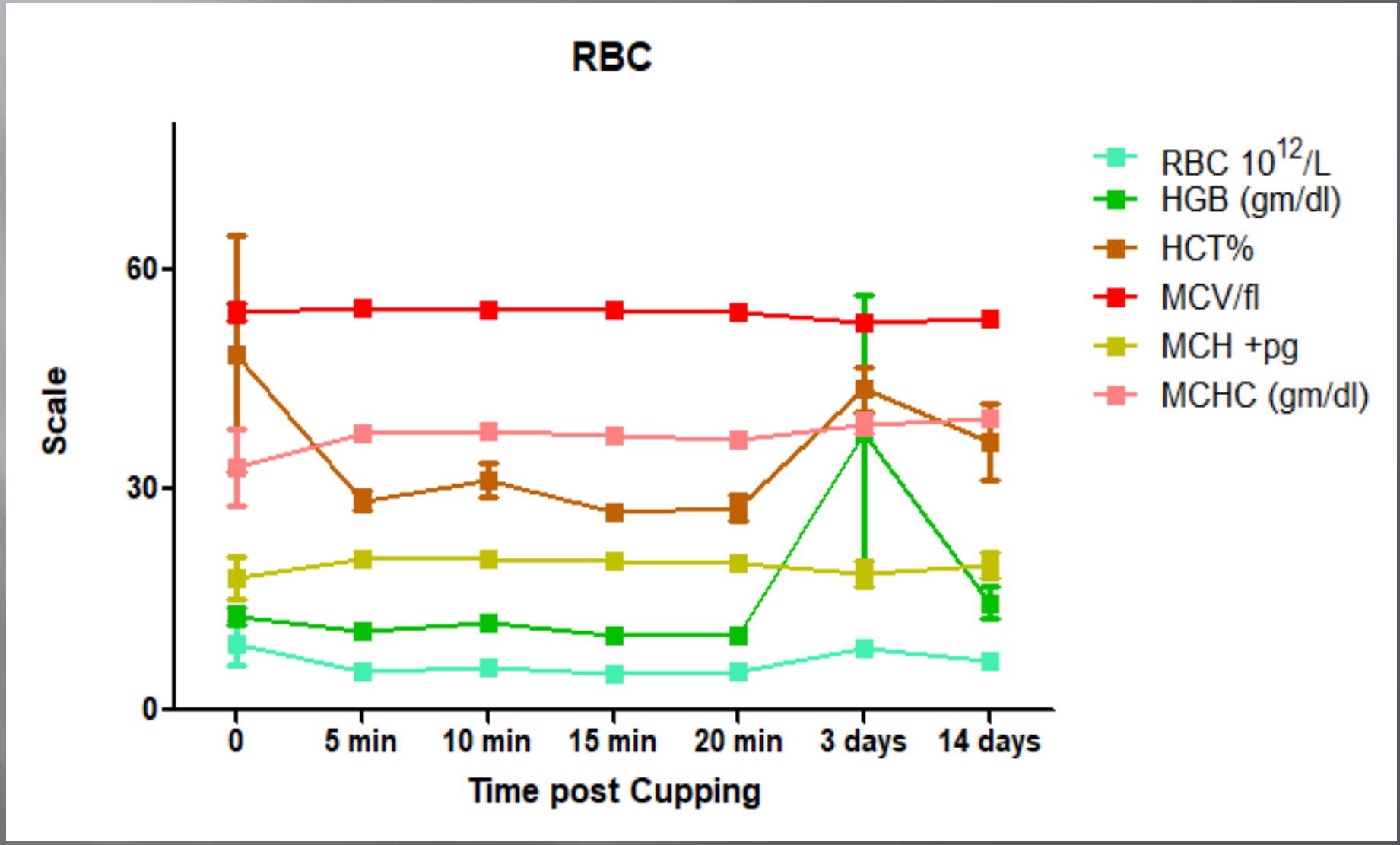
- However, **Neutrophile** were significantly **decreased** during the period 1 (at time 10).

- Where as the **Neutrophile** significantly **decreased** in the period 2. and were significantly **increased** in the period 3.

Result

- while **lymphocytes decreased** after 3 days and 2 weeks after the cupping procedure .

3.2 RBC Information



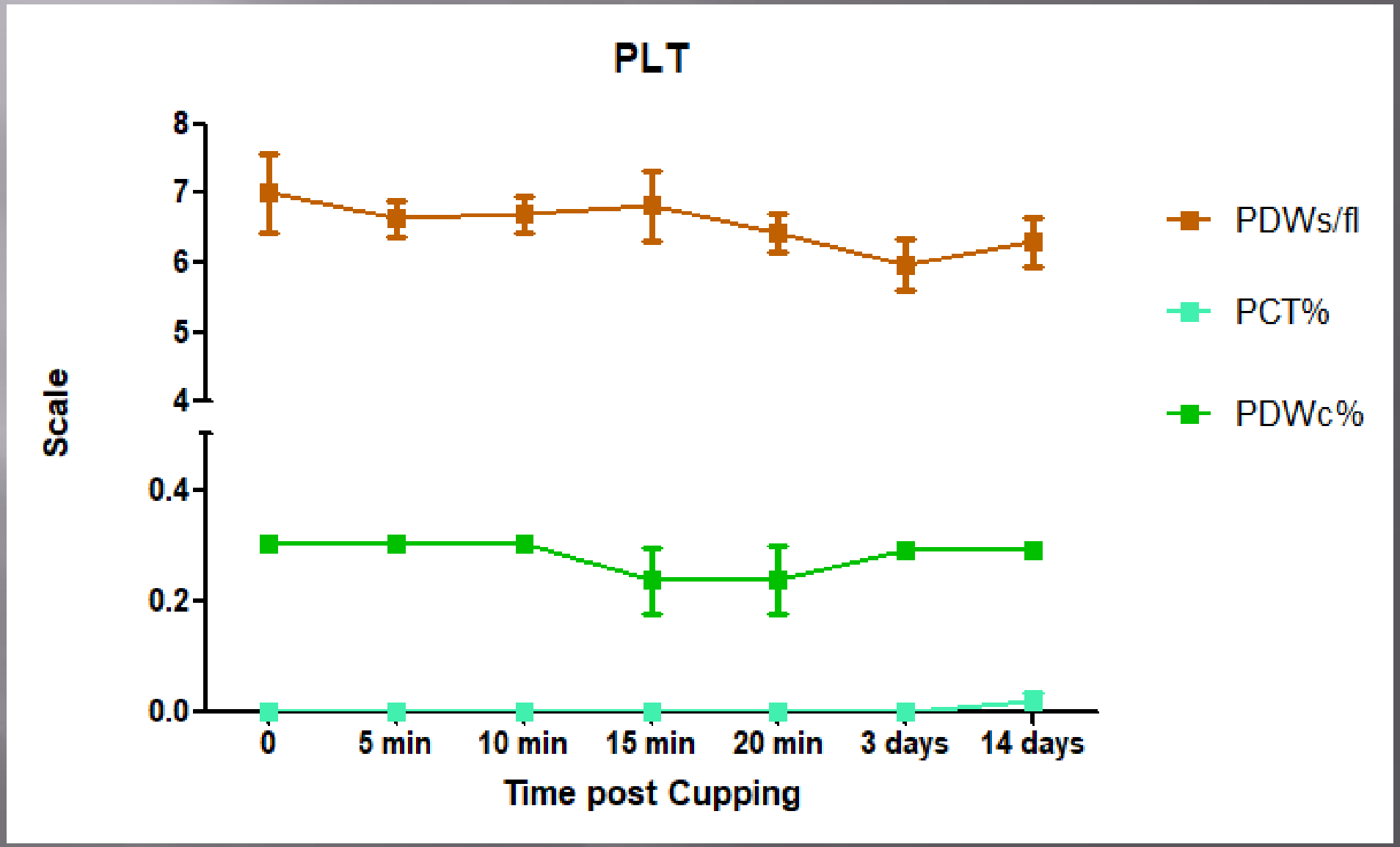
Result

- No statistically significant differences (P value > 0.05) were observed in the venous blood hematological For **RBC indices** "MCV - MCH - MCHC " during all three period .

- **HCT%** significantly **decreased** in the period 1 (at time 5 minutes) during the cupping time.

- Where as **HGB** significantly **increased** in period 2 (after 3 days).

3.3 PLT Information



Result

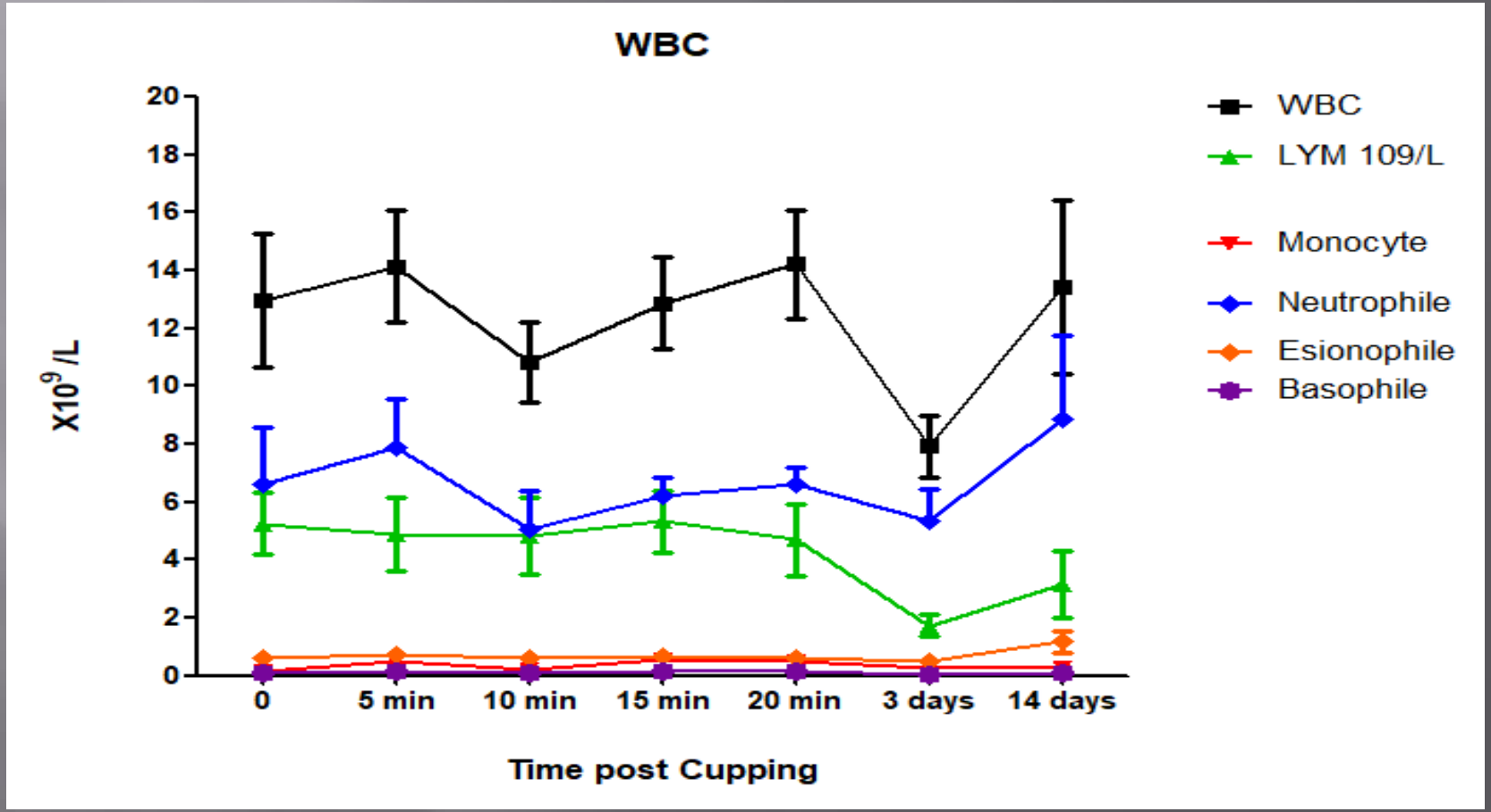
- No significant differences (P value > 0.05) were observed in (**PDWs** , **PCT %** , **PDWc %**) during all three period.

4- Discussion

- This project overview the effect of dry cupping therapy on the hematological and biochemical parameters in the equine.

- In this project , the changes in some of the hematological parameters during all period had been observed.

4.1 WBC


WBC
X10^9 /L
20
18
16
14
12
10
8
6
4
2
0
0
5 min
10 min
15 min
20 min
3 days
14 days
Time post Cupping
WBC
LYM 109/L
Monocyte
Neutrophile
Esionophile
Basophile

WBC

4.1.1 Neutrophile

- **Neutrophil** where significantly **increased** in period 3 (14 days) , may due to heeling process a site of scarification and the effect of release of chemotactic factor and immunoresponse or may due to elevation of endogenous cortisone as response to stress of cupping.

- This results an opposite to (Turke , Wael , and Jamal et al [19]) they found **increased** of neutrophil after period 2(3days) and period 3 (14 days) of cupping.

WBC

4.1.1 Neutrophile

- Where **neutrophil** significant **decrease** in period 1 (10 minutes) after cupping that may due to small hemorrhage by bleeding in site of incision.

- The difference in the blood cell composition due to selective migration of defined blood cell population into the site of cupping.

4.1.2 Lymphocyte

- lymphocytes where significantly decreased of period 2 (3 days) and period 3 (14 days).

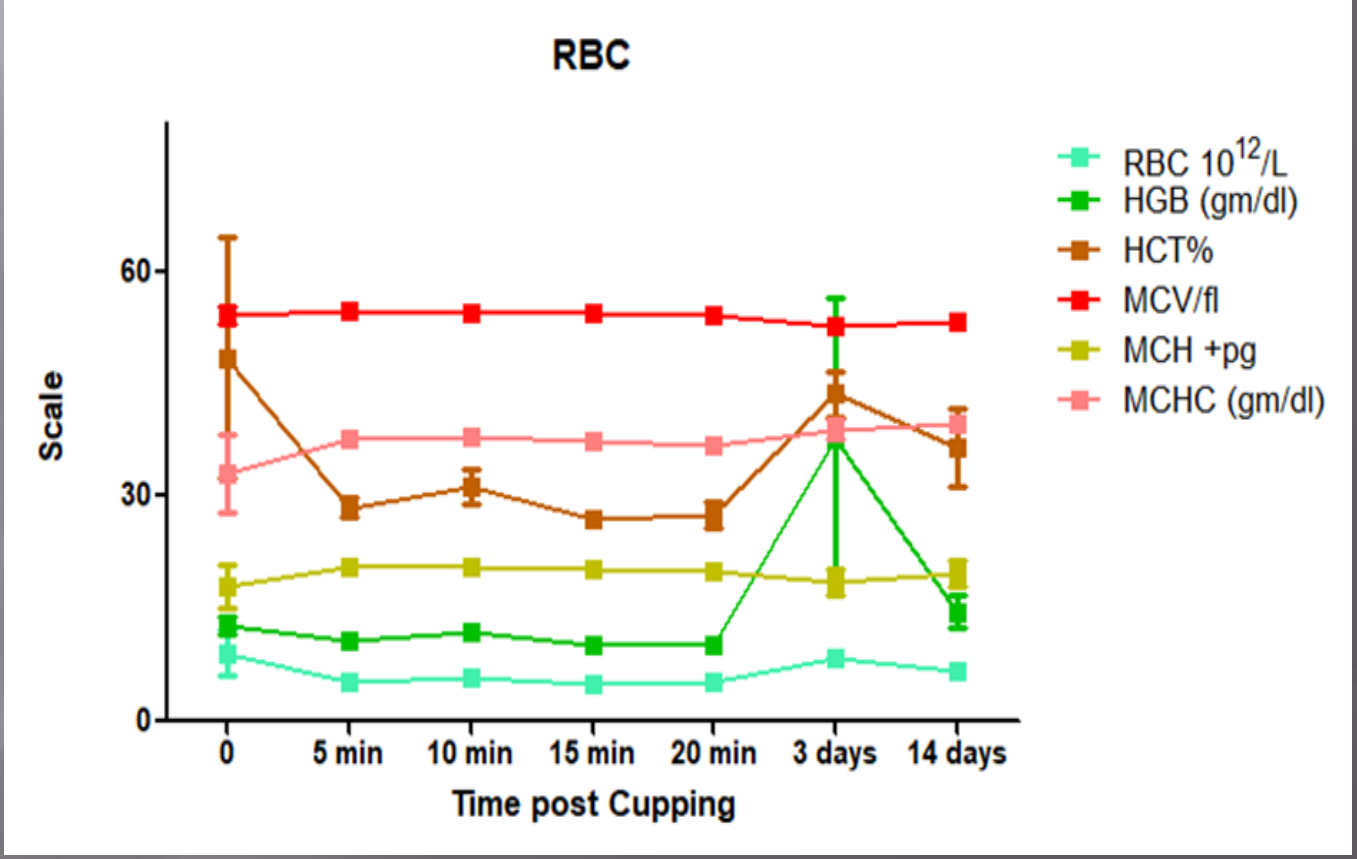
- lymphopenia probably has resulted from temporarly redistribution of recirculating lymphocytes and stress lead to endogenous cortisol relese also may contribute to the lymphopenia .

WBC

4.1.2 Lymphocyte

- wet cupping therapy on the arterial and venous blood parameters in healthy Arabian horses resarch Lymphocyte after 3 days and 14 days of cupping become decreased.

4.2 RBC


RBC
Scale
60
30
0
0
5 min
10 min
15 min
20 min
3 days
14 days
Time post Cupping
RBC 10^12/L
HGB (gm/dl)
HCT%
MCV/fl
MCH +pg
MCHC (gm/dl)

RBC

4.2.1 HCT % and HGB

- **HCT** significantly **decreased** in all period interval of period 1 this may due to loss of blood of hemorrhage by scarification.

- **HGB** **increase** in period 2 (3days) this made due to erthrocytosis as response to hemorrhage occurred 3 days before from the site of scarification.

RBC

4.2.2 PLT

- PLT no significant had been observed in other RBC indics in all 3 period.

5- Conclusions

- Variable change in blood parameter occure as a result of cupping in Donkey.

- This is the second experiment on the effect of cupping on laminitis in equine , which we have proven useful as a complementary treatment in cases of laminitis combined with medical treatment.

6- Recommendations

- It was proposed within this project to examine the effect of cupping on biochemical parameter too especially cortisone.

- Therfore, we recommended to evaluate its effect on cortisone later.

Questions