تاثير الجنس على الصورة الطبيعية للدم فى الجمال المصرية الناضجة

سناء م. نصار ، سعاد أ. عوض ، ليلى . أ. لطفى

الملخص العربى

أخذت عينات الدم فى ٤٦ ذكر ناضج و ٤٢ أنثى ناضجة للجمل المصرى . وكان العدد الاجمالى للخلايا البيضاء ٢٢٠١٧ فى الذكر و ١٧٥١٧ فى الأنثى وكان متوسط القيم للخلايا البيضاء كالآتى على التتابع : الليمفوست ٣ر٤٩ ، ٨ر٤٣ ، المونوسيت ٥ر٤ ، ٧٨ر٢ ، النيتروفيل ٤٣ ، ٥٠ ، الأسيدوفيل ٣ر٤ ، ٢١ر١ ، الباذوفيل ١٨ر١ ، ٢٦ر٪ .

وكان طول القطر للخلايا المختلفة كالآتى : مونوسيت ٢٥ر١٤ ميكرون ، الاسيدوفيل ٨ر٧ ميكرون ، البادوفيل ٩ر٤ ميكرون . وكان لخلايا النيتروفيل حجمان . حجم صغير ٨ر١ ، وحجم كبير ٣ر١١ ميكرون .

وكان لخلايا الليمفوسيت ثلاث أحجام ، صغير ٥ر٥ ، متوسط ٧ر٤ وكبير ١ر١٠ ميكرون وكان متوسط قيمة عدد الخلايا الحمراء فى الذكر والأنثى ٩ر٠٩ و ٨ر٩٧٣ لكل سم مكعب .

وكانت نسبة الهيموجلوبين ٧٧ر٨ ، ٧٧ر١٠ ٪ . وكان مؤشر اللون ٨٨٧ر٠ وكان متوسط الهيموجلوبين الكروى ١٥ر١٠٥ م.ج. ، ١٣ر٥٤٥ م.ج على التتابع .

وكانت مقاييس الخلايا الحمراء ٣ر٨ × ٣ر٤٥ ووصل قيمة الهيموتكريت الى ٢٠١٥ر٤٣ ٢ر٠٩٦ بينما كان المتوسط الكروى ٣٧ر٤٣٥ ، ٣٢ر١٧٥ م.ى.

ووصلت سرعة الترسيب بعد ثلاث ساعات الى ٢ر٩٧ م.م ، ٦ر١٢ م.م بعد ٦ ساعات فى الذكر ، ٣ر٥٣ م.م بعد ثلاث ساعات ٦ر٥٩ بعد ٦ ساعات فى الأنثى .

Physiology Dept., Faculty of Med., Assiut University
Head of Dept. Prof. M.Y. Hamed.

INFLUENCE OF SEX ON THE NORMAL BLOOD PICTURE OF ADULT EGYPTIAN CAMEL (CAMELUS DROMEDARIUS)

(With 5 tables)

By

Sanaa, M. Nassar, Soad, A. Mansour and Laila A. Lotfi *

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SUMMARY

Jugular blood was taken from 46 adult male and 42 adult female Arabian camels. Total white cell count was 22017 in male and 17517 per cu mm in female. The respective mean values were of as follows ; lymphocytes 49.3, 43.8 ; monocytes 4.5, 2.78 ; neutrphile 43.0, 50.0 acidophils 3.3, 1.21 and basophils 0.18, 0.26%. The diameter of the different types of white cells were for monocytes 14.25 μ, eosinophils 8.7 u and basophiles 9.4 μ. The neutrophiles were of two sizes small 8.1 u and large 11.3 μ. The lymphocytes had also of three diameters : small 5.5 u. medium 7.4 μ and large 10.1 μ.

The mean values of red cell count in male and female were 9.09 and 8.973 million per cu. mm. The percent of haemoglobin were 8.77% and 77.10%. The colour index were 0.887. The mean corpuscular haemoglobin were 15.105 mg, 13.545 mg respectively. The red cell measurments were 8.3 × 3.45 μ. The haematocrit values reached 3.2015%, 2.96%. while the mean corpuscular volume were 37.435 32.175 cu. μ.

The sedimentation rates equal 2.977 mm after 3 hours and 6.21 mm after 6 hours in male and 3.033 mm after 3 hours and 6 hours in female.

INTRODUCTION

Blood analysis constitutes an outstanding basis for comparison between the normal blood constituents and those attained in pathological conditions. For the clinicians it is more important for their interest to follow up the course of the disease and efficiacy treatment.

Data concerning the haematology of camels are relatively scanty in the current literature. Few reports were available especially those reporting egyption camels (NASR, 1959); BANERJEES, BHATTACHARJEE, and SINGH 1962; LAKHOTIA, BHARGAVA, and MEHROTRA. 1964). Still more few dealing with sex difference (LAKHOTIA ET AL, 1964).

The object of this work is to make further study on normal cells of camels blood in both the male and female to present some haematological data for the clinicians in the field.

* Physiology Dept. Faculty of Vet. Med. Cairo University.

MATERIALS AND METHODS

Blood samples were collected from 88 adult camels (46 males and 42 females) at Giza slaughter house. Investigated animals were apparently healthy and free from external parasites (Antimortum examination). Post mortem examination proved, that these animals were free also from internal parasites as well as from any pathological alterations in the internal organs. 5 ml blood were collected from the jugular vein in glass vials containing 10 mg E.D.T.A.

Methods:

* Red cells were counted by the use of photo-electric calortimeter(KXTON, 1944).

* Haemoglobin concentration was estimated by the photoelectric method described by WONG (1928).

* Packed cell volume, buffy coat and plasma volume were measured after the method reported by WINTROBE (1961).

* Total white cell count, differentiated cells were calculated after the method described by SCHALM (1967).

* The stain used for blood smears was Wright-leishman stain.

* The Westergren method was adopted to recored the erythocyte sedimintation rate (GRADWHOL, 1948). In the colour index, the normal value of Hb and red corpuscles of the camel was hypothetically calculated by collecting the average reading of many of the studies reported on the egyptian camel and it was found from calculation that the average (100%) of Hb for the camel is equal to 13.8 gm per 100 ml blood and the average (100%) of red blood corpuscle is equal 8.67 million per cmm.

RESULTS AND DISCUSSION

Results of the haematological value are presented in tables(1 and 2). The total leucocytic count was fount to be higher in mature male camels (22.017/ mm^3) than mature she-camel (17.571/mm^3). Other levels were given by previous workers. Values between (7.840 and 20.2000 mm^3) were reported by NASR (1959) in male sudanese camels. 12.800 and 18.000 cells were respectively recorded by LAKHOTIA *et al* (1964)and BANERJEE *et al* (1962). It seems from these differences that climatic condition affects the white cell picture. This was recently noticed by ISMAIL, MOUSTAFA and AMER (1976). The authors interpreted the increased leucocytic - count and low temperature to help the body resistance against infections during

Exposure to cold. The same was true for the results obtained in she-camels. The only value (11.300 c. mm) that could be traced in the available literature for female was given by LAKHOTIA et al (1964).

The percent of polymorph nuclear cells (50%) in females was higher than males (43%). The reached value semulated that reported by FARAHAT (1975).

Lymphocytic percent in males (49.3%) was higher than females (43.8%). Other investigators SOLIMAN (1969), Soltman and El MOTY (1973) gave relatively higher results that existed between (59-66%). Others, NASR (1959); BANERJEE ET AL., (1962) ISMAIL Et Al(1976) gave in the contrary lower results between (36-49%).

Monocytes exhibited nearly the double value in males (4.5%) than females (2.78%). Variable results starting from 0.031% up to 14% were given by NASR (1959), BANERJEE ET AL. (1962): SOLIMAN (1969), SOLIMAN and El-MOTY (1973), FARAHAT (1975) and ISMAIL ET AL., (1976), for monocyte mean percentages.

A nearly same behaviour was noticed in the eosinophils and reached in male 3.3%, which was also higher than females (2.25%). The recorded levels

TABLE 1.—**The number of white blood corpuscles, differential count and dimentions of white blood cells of (Camelus Dromedarius).**

Animal	W.B.C. × 10^3 mm	Lymphocytes			Neutrophile		Monocytes	Acidophils	Bosophils
Adult . .	22.02	49.30			43.00		4.50	3.30	0.18
Male (46) .	± 4.64	± 4.64			± 2.62		± 0.66	± 2.82	± 0.01
Adult . . .	17.57	43.8			50.00		2.78	1.21	0.26
Female (42)	± 0.01	± 3.18			± 3.39		± 0.01	± 0.00	± 0.00
Dimensions in μ.		Small	Intermediate	large	Small	large	14.26	8.7	9.4
		5.5	7.4	10.1	8.1	11.3			
		±0.04	±0.05	±0.06	±8.37	±0.05	± 0.03	± 0.10	± 0.05

± Standard error.

TABLE 2.—The number of red blood corpuscles, haemoglobin contents, colours index, mean corpuscular haemoglobin, hematocrit values, packed cell volume, mean corpuscular volume, Erythrocyte sedimentation rate of camel blood (Westergren method) in (camelus Dromodrius).

Animal	R.B. Cs/C. mm	Hb in gm	colour index	Mch U.g	hematocrit value (wintrob)			M.C.V. Cu.μ	Sedmentation rate mm		Dimensions of erythrocyte (μ)
					P.C.V.	Buffy coat	Plasma		After 3 hours	after 6 hours	
Adult . .	9.09	14 gm	0.89	15.11	3.20	0.35	6.82	34.43	2.97	6.21	8.30
male (64)	±0.01	± 7.07	±0.06	± 0.05	±0.01	±0.07	±0.03	± 0.01	±0.01	±0.01	±0.84
Adult . .	8.973	12 gm.	0.84	13.55	2.96	0.21	6.61	32.18	3.03	6.59	3.45
female(42)	±0.01	± 1.69	±0.04	±0.03	±0.08	±0.01	±0.04	±0.04	±0.30	±0.01	±0.47

± Standard of error

were clearly lower than that reported by NASR (1959), FARAHAT (1975) and ISMAIL ET AL (1976) with mean percentage from 8% up to 14.77%.

It seems that these differences in the differentiated cells was also affected by the climatic changes under which the animals are influenced with an example that may emphathiaze this hypothesis is the work of ISMAIL ET AL (1976) who recorded a changes in the eosinophil count that ranged from 1.8% in autumn up to 14.77% in summer. However GHOSAL (1973) denied such influences. It was thought also, while screening these results, that these differences especially, concerning eosinophils, that exhausion and stress before slaughtering may be responsible for such variations. One can not deny the influence of stress, but again we must bear in mind that our data is based on 88 camels.

The dimentions of the red blood corpuscle of the Indian camel (7.7X4.2 μ), recorded by BANERJEE et al., (1962), were larger than that of Egyptian camels, presented in this work (8.3 X 3.45 μ). Sudanees camel has relatively smaller dimentions (7.0 X 3.5 μ) than egyptian camel recorded by NASR (1959). the smaller dimentions of red blood corpuscle in egyptian camel were compansated by the relatively higher total number of red blood corpuscle. In the present work, the number was 9.09 million/mm³/male in and 8.937 million, mm³ in female. ISMAIL ET AL (1976) recorded 8.749 million/mm³ 6.5 million/ mm³/ and 6.2 millions / mm³ were recorded in males and femals respactively by LAKHOTIA ET AL (1964). BANERJEE ET AL (1962) recorded rather similar results in male (7.24 mil).

The hematocrit value in the egyptian camel was 32.015% in male and 29.6% in female. LAKHOTIA ET AL (1964) gave rather similar figures in Indian race reaching 30.08% in male and 31.47% in female. More lowered value was given in this Indian camel by BANERJEE et al., (1962), 27% Later GHOSAL ET AL, in India (1973) criticized these figures and acc used this to haemodilution caused as a result of giving water to these animals before recording, The auther's figure reached (35%) haematocrit value.

The haemoglobin content varied with sex, where it was 12.5 g. in female and it reached 14 gm in male. The mean value for both sexes was 13.2 g which agrees, with minor differences, that reported by BANERJEE ET AL., (1962), FARAHAT (1975), and ISMAIL ET AL (1976). The range they reported was between 13.1 g. up to 13.5 g. However, lower concentiation was reported by LAKHOTIA AT AL (1964), i.e. 11.8 gm in female and 11.68 gm. in male. SOLIMAN an El MOTY (1973) gave more lower results (11.2 g%).

The only available record (0.75) on the colour index in camel was given by FARAHAT (1973) and ranged between 0.65-0.8.5. Again it was noticed that it was higher in male (0.885) than in female (0.837).

The influence of sex was clear as faster sedimentation rate in female (3.033 mm) after 3 hours, (6.59mm) after 6 hours was noticed when compared

by male (6.967 mm) after 3 hours and (6.21 mm) after 6 hours. On the contrary LAKHOTIA *et al* (1964) noticed that males blood was faster than females.

In conclusion, the male was always of higher values than the famele in all studied blood indexs except the sedimentation rate where the female suspension stability is relatively higher.

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Authors address : Sanaa, M. Nassar. Dept. of physiology Fac. of Med. Assiut University, Egypt.