RESULTS

Results of the present study are demonstrated in the following tables and figures:

Table-1 Demographic characteristics of the studied groups

		Patients (n=40)	**Controls (n=20)**	**Student t test**	
				t	**p**
Gestational age (weeks)		26.9 ± 1.7	38.7 ± 1.2	-27.6	0.0001
Age (days)		13.6 ± 4.8	14.5 ± 4.7	-0.71	0.48
				Chi-square test	
Sex	**Male**	26 (65.0 %)	11 (55.0 %)	X2	P
	Female	14 (35.0 %)	9 (45.0 %)	0.56	0.45

This table shows no statistically significant differences between the studied groups regarding age and sex distribution.

Table-2 Clinical diagnoses in the studied patients (n=40)

	No	**%**
Neonatal jaundice	13	32.5
Respiratory distress	11	27.5
Sepsis	8	20.0
Convulsions	8	20.0

This table shows the reported clinical diagnoses in the studied patients.

Table-3 Comparison of hematological parameters in the studied groups

	Patients (n=40)	**Controls (n=20)**	**Student t test**	
			t	**p**
RBCs (mil./ml)	3.2 ± 0.2	4.6 ± 0.5	-15.4	**0.0001**
HB (mg/dl)	9.3 ± 2.1	14.4 ± 1.2	-10.3	**0.0001**
Hematocrit %	32.1 ± 2.3	46.5 ± 4.9	-15.6	**0.0001**

This table shows that patients had significantly lower RBCs count, Hb concentration and hematocrit value when compared with controls.

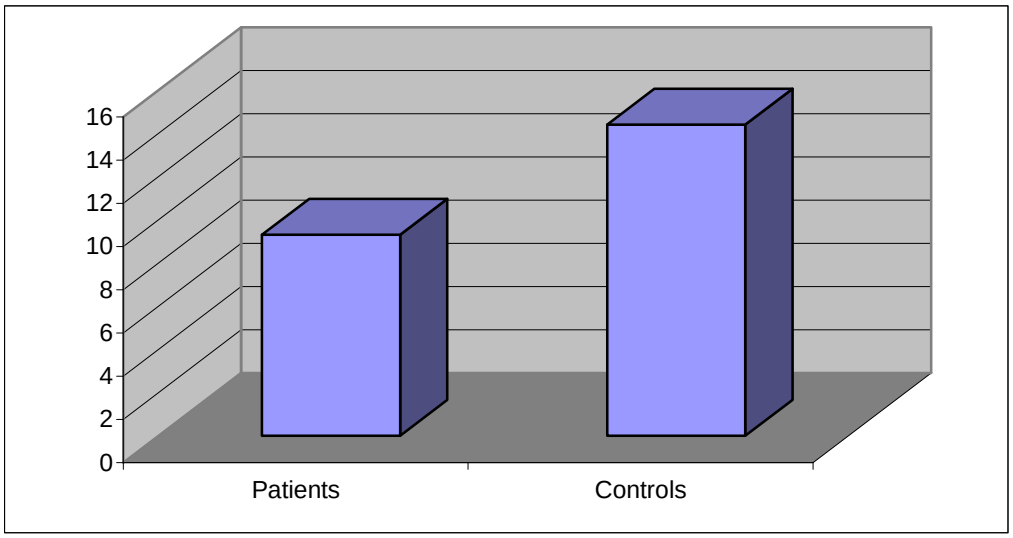

Fig. (1): Comparison of Hb concentration between the studied groups

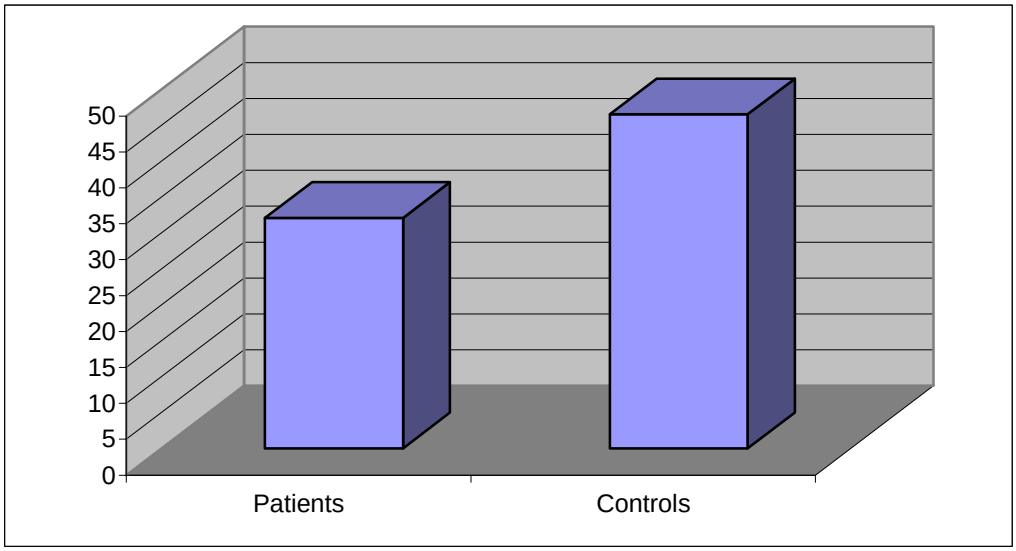

Fig. (2): Comparison of hematocrit value between the studied groups

Table-4 Comparison of serum electrolytes in the studied groups

	Patients (n=40)	**Controls (n=20)**	**Student t test**	
			t	**p**
Na	136.3 ± 4.3	140.8 ± 2.3	-4.4	**0.0001**
K	5.9 ± 1.1	6.0 ± 0.9	-0.71	0.48
Ca	9.8 ± 1.4	10.1 ± 1.4	-0.68	0.50

This tables shows significantly lower Na and K levels in patients when compared to controls.

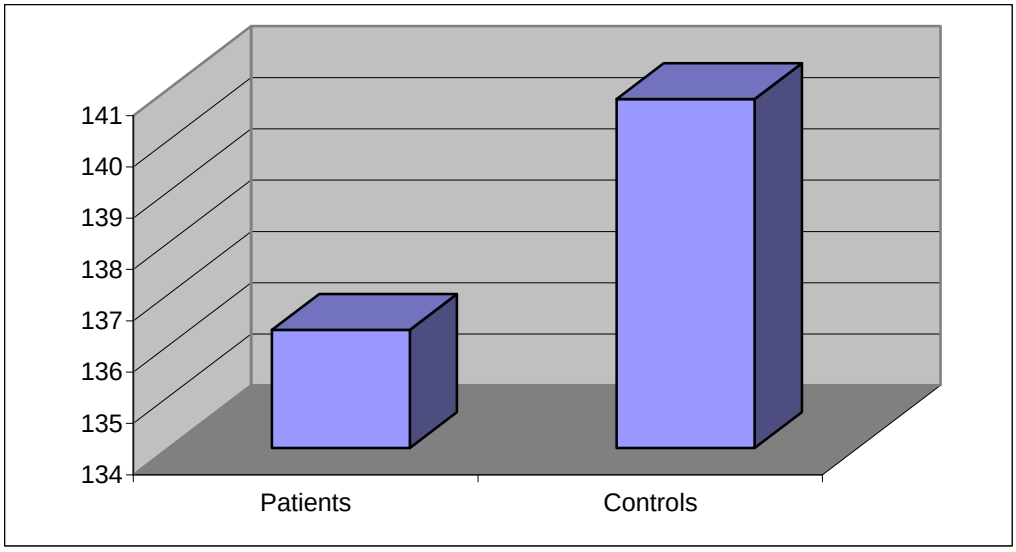

Fig. (3): Comparison of Na levels between the studied groups

Table-5 Comparison of other laboratory parameters in the studied groups

	Patients (n=40)	**Controls (n=20)**	**Student t test**	
			t	**p**
pH	7.31 ± 0.08	7.41 ± 0.03	-4.9	**0.0001**
pO2 (mmHg)	43.8 ± 4.5	62.1 ± 5.1	-14.2	**0.0001**
pCO2 (mmHg)	42.4 ± 8.8	39.8 ± 2.7	1.7	0.09
HCO3 (mEq/L)	21.1 ± 3.6	24.1 ± 1.4	-4.6	**0.0001**
Glucose	100.6 ± 24.5	63.5 ± 16.4	7.0	**0.0001**

This table shows that patients had significantly lower pH, pO2 and HCO3 levels. Patients also, had significantly higher glucose levels when compared to controls. In spite of the fact that patients had significantly higher pCO2 when compared to controls, the differences lack statistical significance.

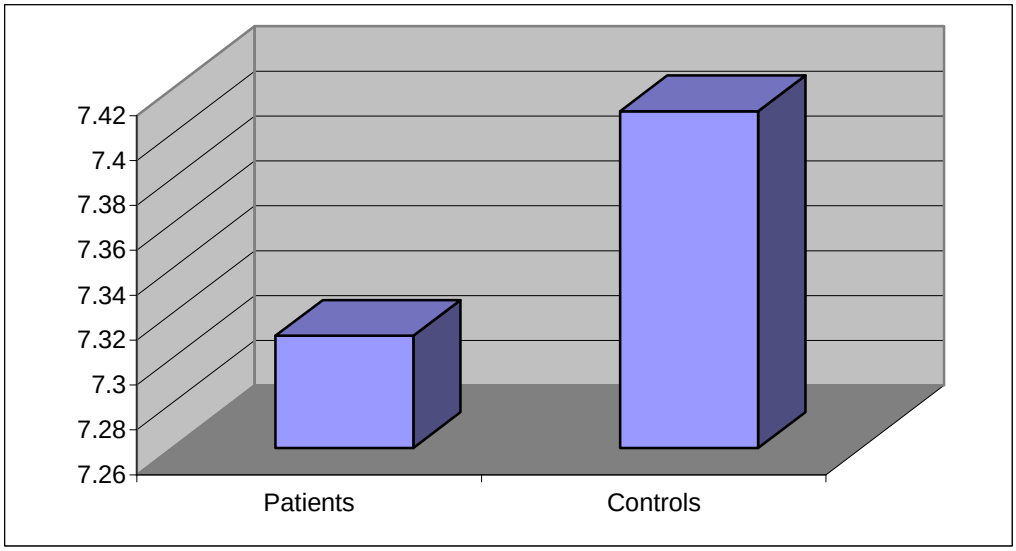

Fig. (4): Comparison of pH levels between the studied groups

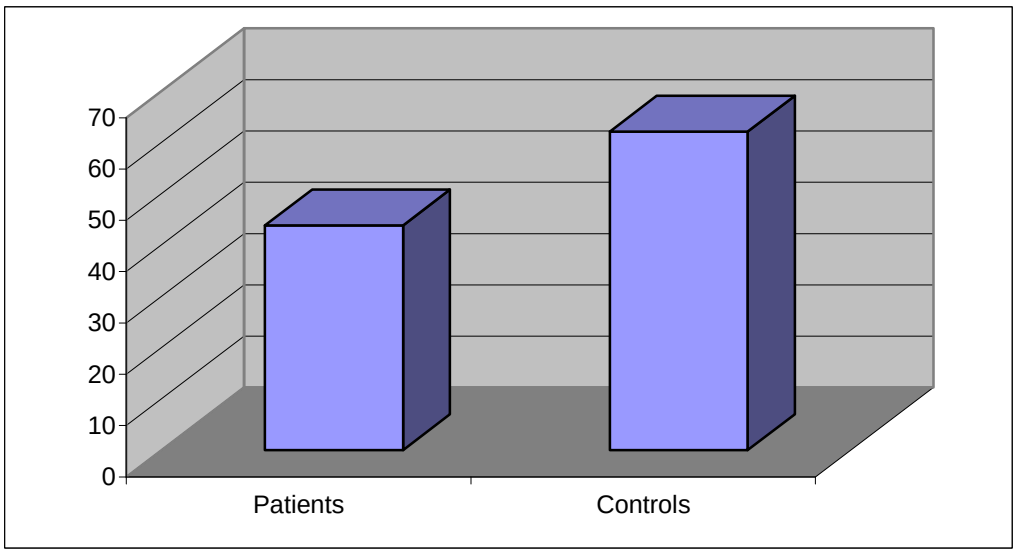

Fig. (5): Comparison of pO2 levels between the studied groups

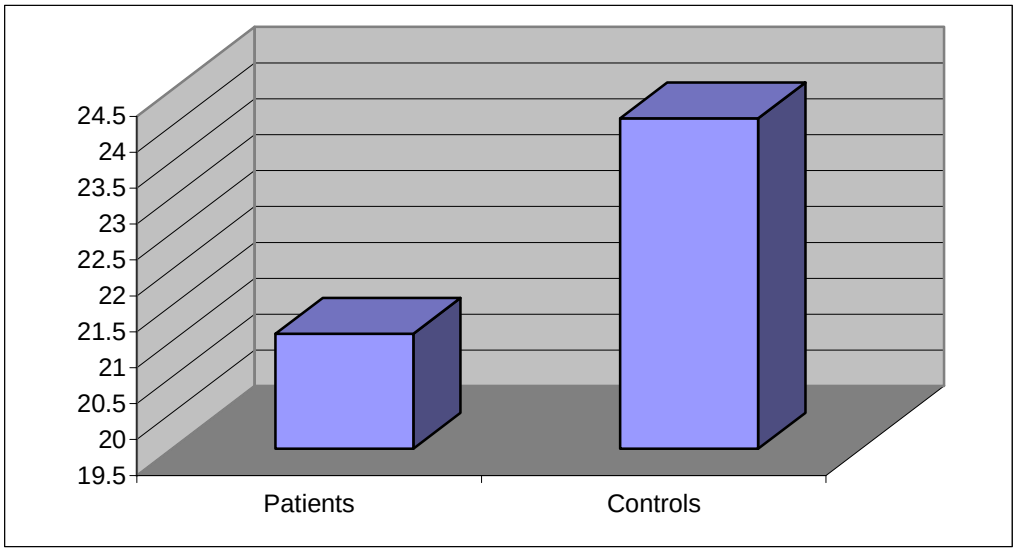

Fig. (6): Comparison of HCO3 levels between the studied groups

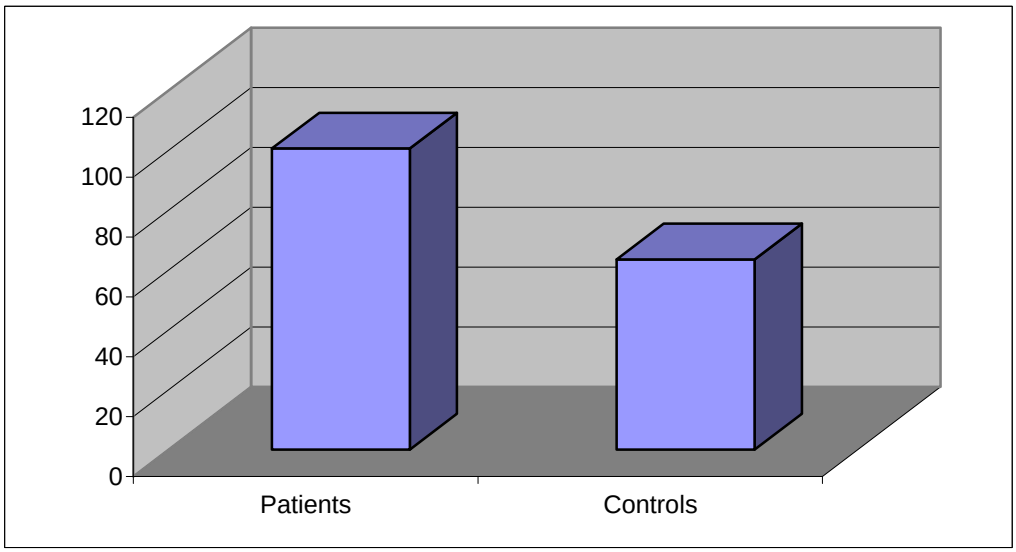

Fig. (7): Comparison of glucose levels between the studied groups

Table-6 Comparison between hematological parameters before and after RBCs transfusion

	Before RBCs	After RBCs	Student t test	
			t	p
RBCs	3.2 ± 0.2	4.7 ± 0.7	-12.6	**0.0001**
HB	9.3 ± 2.1	10.2 ± 1.3	-2.6	**0.012**
Hematocrit	32.1 ± 2.3	38.0 ± 2.7	-10.5	**0.0001**

This table shows a statistically significant increase in RBCs count, Hb concentration and hematocrit value after RBCs transfusion.

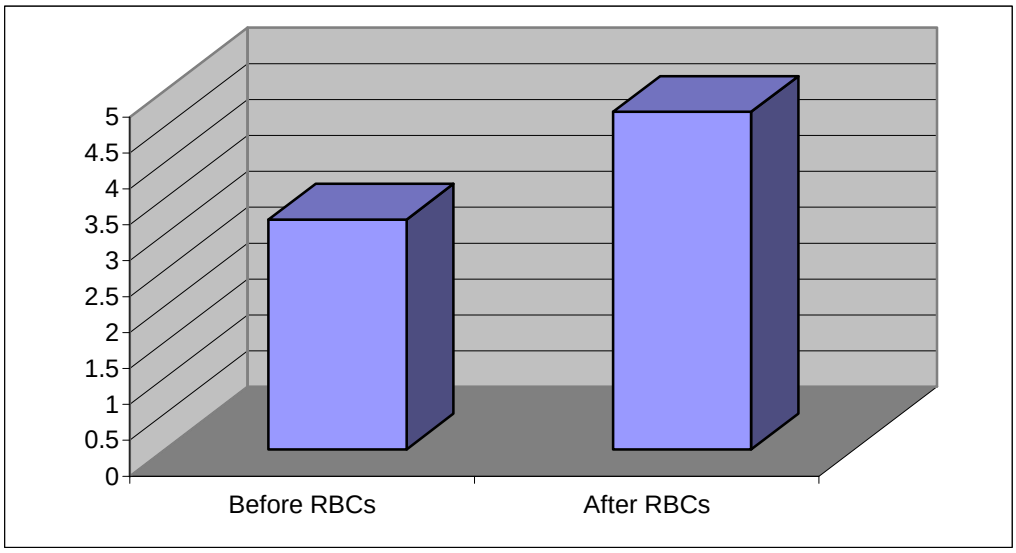

Fig. (8): Comparison of RBCs count before and after RBCs transfusion

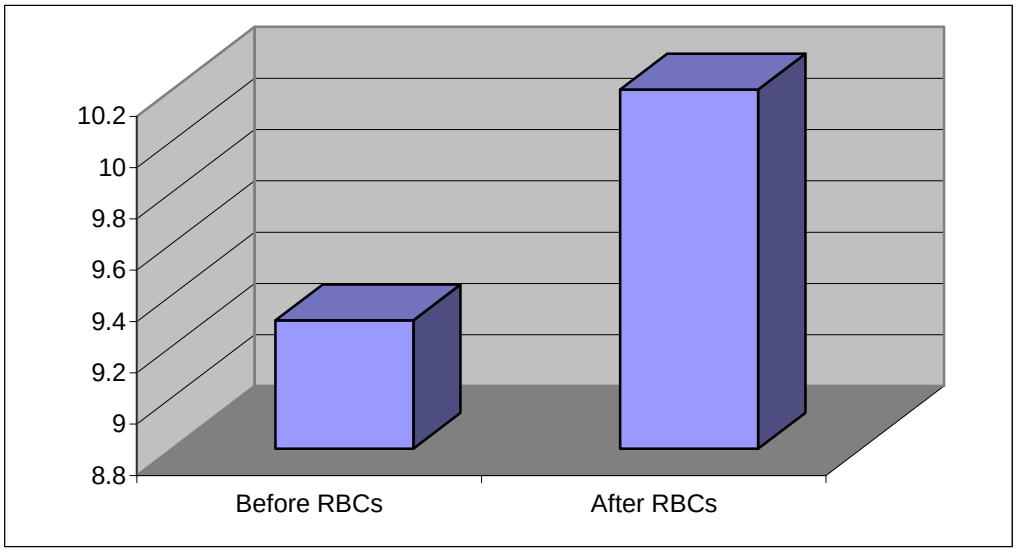

Fig. (9): Comparison of Hb concentration before and after RBCs transfusion**.**

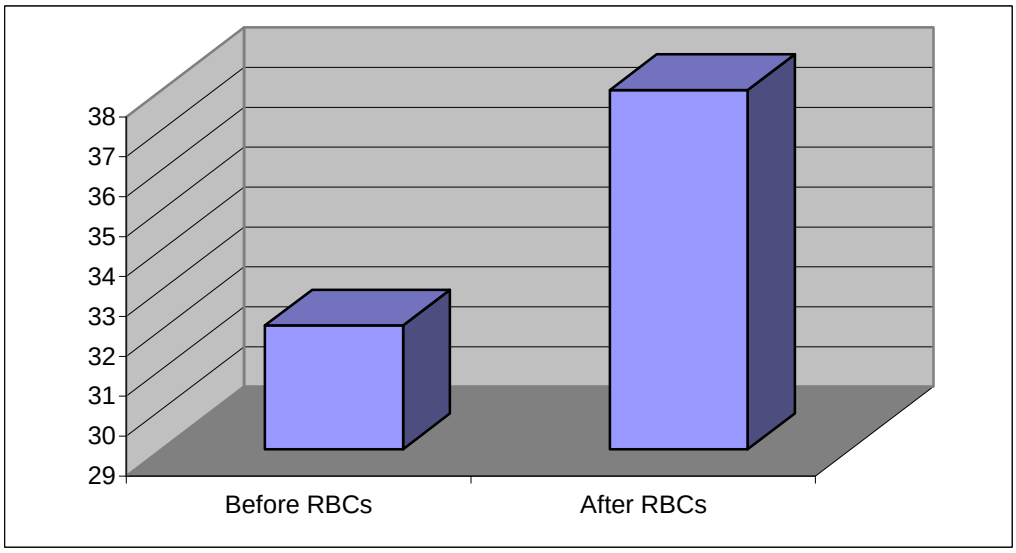

Fig. (10): Comparison of hematocrit before and after RBCs transfusion.

Table-7 Comparison between serum electrolytes before and after RBCs transfusion

	Before RBCs	After RBCs	Student t test	
			t	p
Na	136.3 ± 4.3	133.2 ± 18.8	0.99	0.33
K	5.9 ± 0.8	5.8 ± 0.9	0.09	0.93
Ca	9.9 ± 1.4	9.9 ± 1.5	-0.19	0.85

This table shows no statistically significant difference regarding the serum electrolyte levels before and after RBCs transfusion.

Table-8 Comparison between serum other laboratory parameters before and after RBCs transfusion.

	Before RBCs	**After RBCs**	**Student t test**	
			t	**p**
pH	7.31 ± 0.08	7.33 ± 0.07	-0.95	0.35
pO2	43.8 ± 4.5	49.7 ± 6.1	-4.9	**0.0001**
pCO2	42.4 ± 8.8	44.6 ± 7.5	-1.2	0.23
HCO3	21.1 ± 3.6	21.3 ± 5.3	-0.24	0.81
Glucose	100.6 ± 24.5	85.2 ± 28.8	2.6	**0.012**

This table shows that after RBCs transfusion patients had significantly higher pO2 and lower blood glucose.

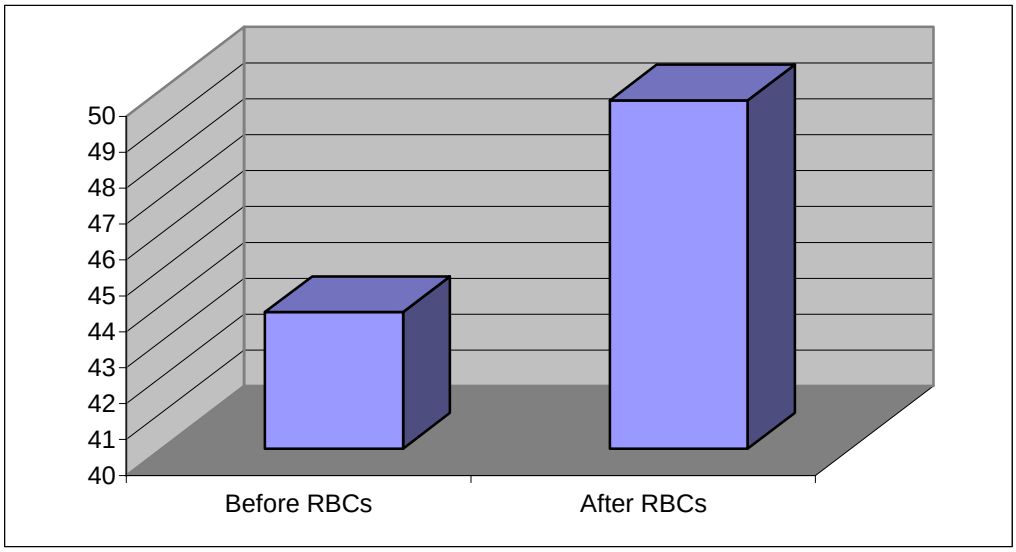

Fig. (11): Comparison of pO2 before and after RBCs transfusion.

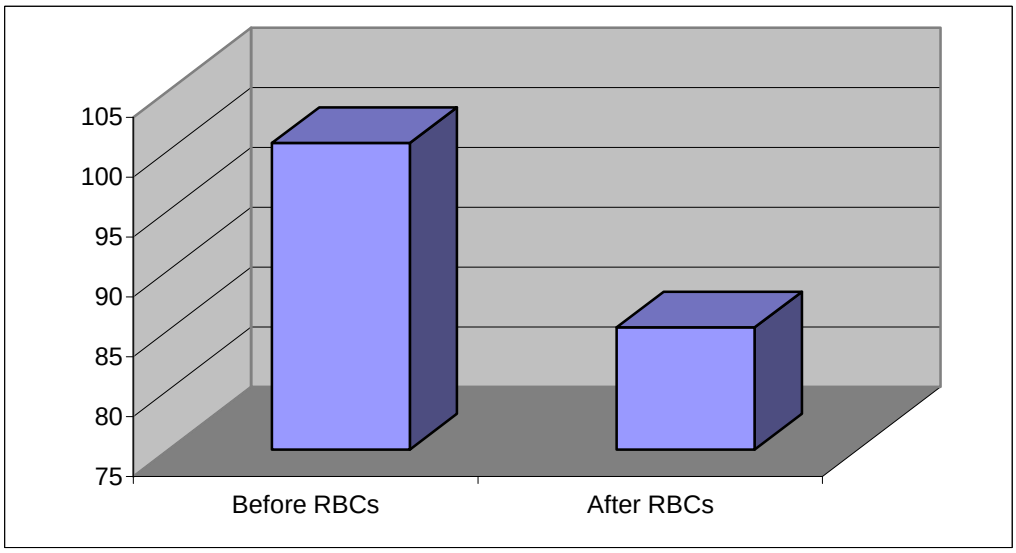

Fig. (12): Comparison of blood glucose before and after RBCs transfusion.

Table-9 Correlation between amount of transfused RBCs and hematological parameters

	RBCs amount	
	r	p
RBCs	0.41	**0.009**
HB	0.5	**0.001**
Hematocrit	0.43	**0.006**

This table shows a significant positive correlation between amount of transfused RBCs and the hematological parameters.

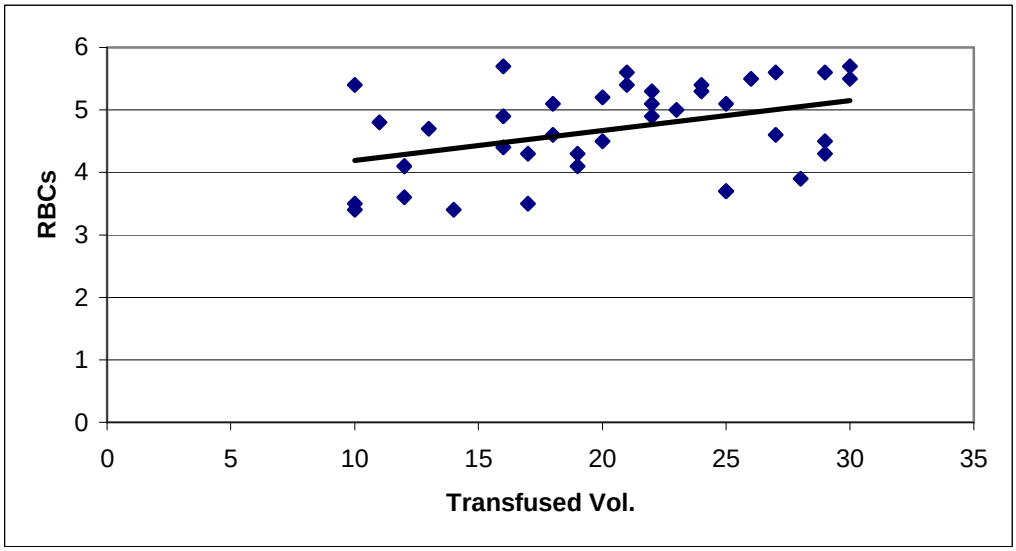

Fig. (13): Relation of RBCs count to transfused RBCs volume.

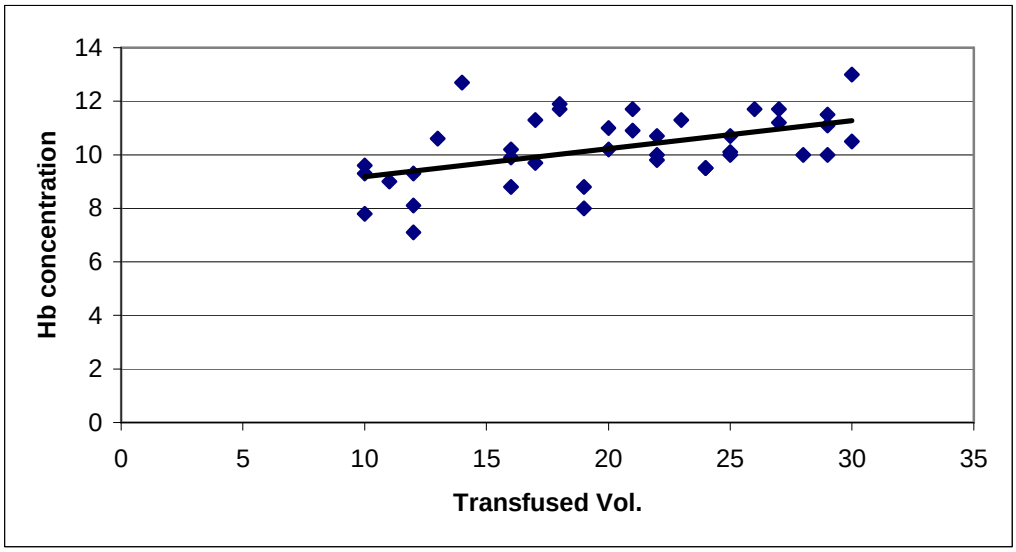

Fig. (14): Relation of HB to transfused RBCs volume.

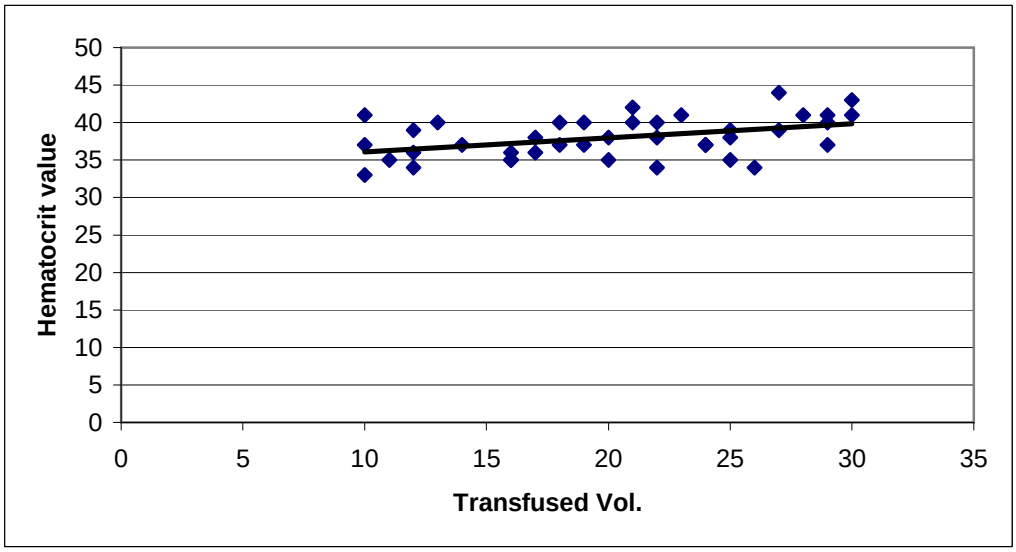

Fig. (15): Relation of hematocrit value to transfused RBCs volume.

Table-10 Correlation between amount of transfused RBCs and serum electrolytes

	RBCs amount	
	r	p
Na	-0.02	0.89
K	-0.08	0.65
Ca	-0.12	0.46

This table shows no correlation between RBCs transfused amount and serum electrolytes.

Table-11 Correlation between amount of transfused RBCs and other laboratory parameters

	RBCs amount	
	r	p
pH	-0.16	0.31
pO2	0.07	0.66
pCO2	-0.28	0.08
HCO3	-0.18	0.27
Glucose	0.22	0.17

This table shows no correlation between RBCs transfused amount and other laboratory parameters.