CHAPTER IV

RESULTS

The results are summarized in the tables (4) to (9) and illustrated in figures (2) to (8).

IV.1. TABLES DEMONSTRATION

Table 4.

Table 4. shows the laboratory data of serum of all rachitic infants in comparison to all control group :

The serum zinc levels for all rachitic infants and all control group are 0.63 ± 0.3 and 0.77 ± 0.31 ppm respectively ($p < 0.05$ indicating a statistically significant difference).

The serum magnesium levels for all rachitic infants and all control group are 5.82 ± 0.33 and 5.83 ± 0.43 ppm respectively ($p = 0.44$ showing a statistically insignificant difference).

The serum alkaline phosphatase activities for all rachitic infants and all control group are 333 ± 145 and 94 ± 13 U/L respectively ($p < 0.0001$ denoting a statistically significant difference).

The serum calcium levels for all rachitic infants and all control group are 8.63 ± 1.05 and 10.14 ± 0.62 mg/dL respectively ($p < 0.0001$ showing a statistically significant difference).

The serum inorganic phosphate levels for all rachitic infants and all control group are 3.97 ± 0.87 and 4.26 ± 0.28 mg/dL respectively ($p = 0.08$ representing a statistically insignificant difference).

Table 5.

Table 5. demonstrates the laboratory data of serum of breast fed rachitic infants in comparison to breast fed control group :

The serum zinc levels for breast fed rachitic infants and breast fed control group are 0.83 ± 0.29 and 0.68 ± 0.15 ppm respectively ($p = 7.8$ indicating a statistically insignificant difference).

The serum magnesium levels for breast fed rachitic infants and breast fed control group are 5.81 ± 0.44 and 5.64 ± 0.56 ppm respectively ($p = 0.18$ showing a statistically insignificant difference)

The serum alkaline phosphatase activities for breast fed rachitic infants and breast fed control group are 378 ± 157 and 91 ± 12 U/L respectively ($p < 0.0001$ denoting a statistically significant difference).

The serum calcium levels for breast fed rachitic infants and breast fed control group are 8.99 ± 0.93 and 10.29 ± 0.58 mg/dL respectively ($p < 0.0001$ showing a statistically significant difference).

The serum inorganic phosphate levels for breast fed rachitic infants and breast fed control group are 3.65 ± 0.58 and 4.27 ± 0.28 mg/dL respectively ($p < 0.0001$ representing a statistically significant difference).

Table 6.

Table 6. represents the laboratory data of serum of artificially fed rachitic infants in comparison to artificially fed control group :

The serum zinc levels for artificially fed rachitic infants and artificially fed control group are 0.44 ± 0.16 and 0.86 ± 0.4 ppm respectively ($p < 0.0001$ denoting a statistically significant difference).

The serum magnesium levels for artificially fed rachitic infants and artificially fed control group are 5.82 ± 0.18 and 6.02 ± 0.08 ppm respectively ($p < 0.0001$ showing a statistically significant difference).

The serum alkaline phosphatase activities for artificially fed rachitic infants and artificially fed control group are 288 ± 118 and 98 ± 13 U/L respectively ($p < 0.0001$ denoting a statistically significant difference).

The serum calcium levels for artificially fed rachitic infants and artificially fed control group are 8.28 ± 1.06 and 09.98 ± 0.66 mg/dL respectively ($p < 0.0001$ showing a statistically significant difference).

The serum inorganic phosphate levels for artificially fed rachitic infants and artificially fed control group are 4.29 ± 1.0 and 4.24 ± 0.3 mg/dL respectively ($p = 0.43$ representing a statistically insignificant difference).

Table 7.

Table 7. represents the laboratory data of serum of both rachitic, breast fed and artificially fed infants :

The serum zinc levels for both rachitic, breast fed and artificially fed infants are 0.83 ± 0.29 and 0.44 ± 0.16 ppm respectively ($p < 0.0001$ denoting a statistically significant difference).

The serum magnesium levels for both rachitic, breast fed and artificially fed infants are 5.81 ± 0.44 and 5.82 ± 1.18 ppm respectively ($p = 0.49$ showing a statistically insignificant difference).

The serum alkaline phosphatase activities for both rachitic, breast fed and artificially fed infants are 378 ± 157 and 288 ± 118 U/L respectively ($p < 0.05$ denoting a statistically significant difference).

The serum calcium levels for both rachitic, breast fed and artificially fed infants are 8.99 ± 0.93 and 8.26 ± 1.06 mg/dL respectively ($p < 0.05$ showing a statistically significant difference).

The serum inorganic phosphate levels for both rachitic, breast fed and artificially infants fed are 3.65 ± 0.58 and 4.29 ± 1.0 mg/dL respectively ($p < 0.001$ representing a statistically significant difference).

Table 8.

Table 8. represents the laboratory data of serum of both control, breast fed and artificially fed healthy infants :

The serum zinc levels for both control, breast fed and artificially fed infants are 0.68 ± 0.15 and 0.86 ± 0.4 ppm respectively ($p = 0.1$ denoting a statistically insignificant difference).

The serum magnesium levels for both control, breast fed and artificially fed infants are 5.64 ± 0.56 and 6.02 ± 0.08 ppm respectively ($p < 0.05$ showing a statistically significant difference).

The serum alkaline phosphate activities for both control, breast fed and artificially fed infants are 91 ± 12 and 98 ± 13 U/L respectively ($p = 0.13$ denoting a statistically insignificant difference).

The serum calcium levels for both control, breast fed and artificially fed infants are 10.29 ± 0.58 and 9.98 ± 0.66 mg/dL respectively ($p = 0.14$ showing a statistically insignificant difference).

The serum inorganic phosphate levels for both control, breast fed and artificially infants fed are 4.27 ± 0.28 and 4.24 ± 0.3 mg/dL respectively ($p = 0.44$ representing a statistically insignificant difference).

Table 9.

Table 9. describes the laboratory data of milk of mothers of both breast fed, rachitic and control infants :

The breast milk zinc levels for mothers of both rachitic and control infants are 3.07 ± 2.86 and 5.3 ± 3.5 mg/L respectively ($p < 0.05$ denoting a statistically significant difference).

The breast milk magnesium levels for mothers of both rachitic and control infants are 2.98 ± 0.52 and 2.78 ± 0.84 mg/dL respectively ($p = 0.21$ showing a statistically insignificant difference).

IV.2. FIGURES DEMONSTRATION

Figure 2.

Figure 2. presents the mean serum zinc levels in the different studied groups.

The first two columns show all rachitic infants (0.63 ppm) as compared with all control group (0.77 ppm).

The second two columns represent breast fed rachitic infants (0.83 ppm) with respect to breast fed control group (0.68 ppm).

The third two columns demonstrate artificially fed rachitic infants (0.44 ppm) as compared with artificially fed control group (0.86 ppm).

Figure 3.

Figure 3. presents the mean serum magnesium levels in the different studied groups.

The first two columns show all rachitic infants (5.82 ppm) as compared with all control group (5.83 ppm).

The second two columns represent breast fed rachitic infants (5.81 ppm) with respect to breast fed control group (5.64 ppm).

The third two columns demonstrate artificially fed rachitic infants (5.82 ppm) as compared with artificially fed control group (6.02 ppm).

Figure 4.

Figure 4. presents the mean serum alkaline phosphatase activities in the different studied groups.

The first two columns show all rachitic infants (333 U/L) as compared with all control group (94 U/L).

The second two columns represent breast fed rachitic infants (378 U/L) with respect to breast fed control group (91 U/L).

The third two columns demonstrate artificially fed rachitic infants (288 U/L) as compared with artificially fed control group (98 U/L).

Figure 5.

Figure 5. presents the mean serum calcium levels in the different studied groups.

The first two columns show all rachitic infants (8.63 mg/dL) as compared with all control group (10.14 mg/dL).

The second two columns represent breast fed rachitic infants (8.99 mg/dL) with respect to breast fed control group (10.29 mg/dL).

The third two columns demonstrate artificially fed rachitic infants (8.28 mg/dL) as compared with artificially fed control group (9.98 mg/dL).

Figure 6.

Figure 6. presents the mean serum inorganic phosphate levels in the different studied groups.

The first two columns show all rachitic infants (3.97 mg/dL) as compared with all control group (4.26 mg/dL).

The second two columns represent breast fed rachitic infants (3.65 mg/dL) with respect to breast fed control group (4.27 mg/dL).

The third two columns demonstrate artificially fed rachitic infants (4.29 mg/dL) as compared with artificially fed control group (4.24 mg/dL).

Figure 7.

Figure 7. demonstrates the mean zinc level in breast milk of the mothers of breast fed rachitic infants (3.07 mg/L) and breast fed control infants (5.3 mg/L).

Figure 8.

Figure 8. presents the mean magnesium level in breast milk of the mothers of breast fed rachitic infants (2.98 mg/dL) and breast fed control infants (2.78 mg/dL).

Variable	All rachitic infants		All control group		t	p
	Mean	S.D.	Mean	S.D.		
Zinc level (ppm).	0.63	0.30	0.77	0.31	-1.67	<0.05
Magnesium level (ppm).	5.82	0.33	5.83	0.43	-0.15	0.44
Alk. phosphatase activity (U/L).	333	145	94	13	7.35	<0.0001
Calcium level (mg/dL).	8.63	1.05	10.14	0.62	-5.91	<0.0001
Inorganic phosphate level (mg/dL).	3.97	0.87	4.26	0.28	-1.42	0.08

Table 4. Laboratory data of serum of all rachitic infants in comparison to all control group

Variable	Breast fed rachitic infants		Breast fed control group		t	p
	Mean	S.D.	Mean	S.D.		
Zinc level (ppm).	0.83	0.29	0.68	0.15	1.46	0.78
Magnesium level (ppm).	5.81	0.44	5.64	0.56	0.93	0.18
Alk. phosphatase activity (U/L).	378	157	91	12	5.71	<0.0001
Calcium level (mg/dL).	8.99	0.93	10.29	0.58	-4.06	<0.0001
Inorganic phosphate level (mg/dL).	3.65	0.58	4.27	0.28	-3.22	<0.0001

Table 5. Laboratory data of serum of breast fed rachitic infants in comparison to breast fed control group.

Variable	Artificially fed rachitic infants		Artificially fed control group		t	p
	Mean	S.D.	Mean	S.D.		
Zinc level (ppm).	0.44	0.16	0.86	0.40	-4.12	<0.0001
Magnesium level (ppm).	5.82	0.18	6.02	0.08	-3.48	<0.0001
Alk. phosphatase activity (U/L).	288	118	98	13	5.06	<0.0001
Calcium level (mg/dL).	8.28	1.06	9.98	0.66	-4.62	<0.0001
Inorganic phosphate level (mg/dL).	4.29	1.0	4.24	0.30	0.17	0.43

Table 6. Laboratory data of serum of artificially fed rachitic infants in comparison to artificially fed control group

Variable	Breast fed rachitic infants		Artificially fed rachitic infants		t	p
	Mean	S.D.	Mean	S.D.		
Zinc level (ppm).	0.83	0.29	0.44	0.16	5.19	<0.0001
Magnesium level (ppm).	5.81	0.44	5.82	0.18	-0.02	0.49
Alk. phosphatase activity (U/L).	378	157	288	118	2.04	<0.05
Calcium level (mg/dL).	8.99	0.93	8.28	1.06	2.24	<0.05
Inorganic phosphate level (mg/dL).	3.65	0.58	4.29	1.0	-2.51	<0.001

Table 7. Laboratory data of serum of both rachitic, breast fed and artificially fed infants.

Variable	Breast fed healthy infants		Artificially fed healthy infants		t	p
	Mean	S.D.	Mean	S.D.		
Zinc level (ppm).	0.68	0.15	0.86	0.40	-1.33	0.10
Magnesium level (ppm).	5.64	0.56	6.02	0.08	-2.14	<0.05
Alk. phosphatase activity (U/L).	91	12	98	13	-1.18	0.13
Calcium level (mg/dL).	10.29	0.58	9.98	0.66	1.12	0.14
Inorganic phosphate level (mg/dL).	4.27	0.28	4.24	0.30	0.23	0.44

Table 8. Laboratory data of serum of both control group, breast fed and artificially fed.

Variable	Mothers of breast fed rac.infants		Mothers of breast fed crl. group		t	p
	Mean	S.D.	Mean	S.D.		
Zinc (mg/L).	3.07	2.86	5.30	3.50	-1.87	<0.05
Magnesium (mg/dL).	2.98	0.52	2.78	0.84	0.83	0.21

Table 9. Laboratory data of milk of mothers of both breast fed, rachitic and control infants.

Figure 2. Mean serum zinc level in different groups

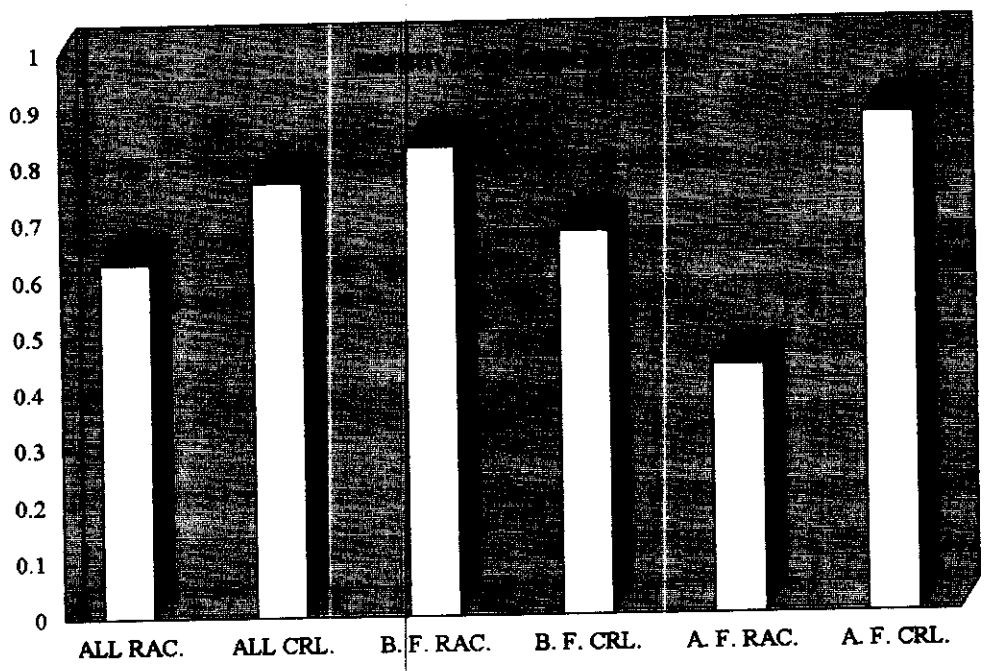

Figure 3. Mean serum magnesium level in different groups

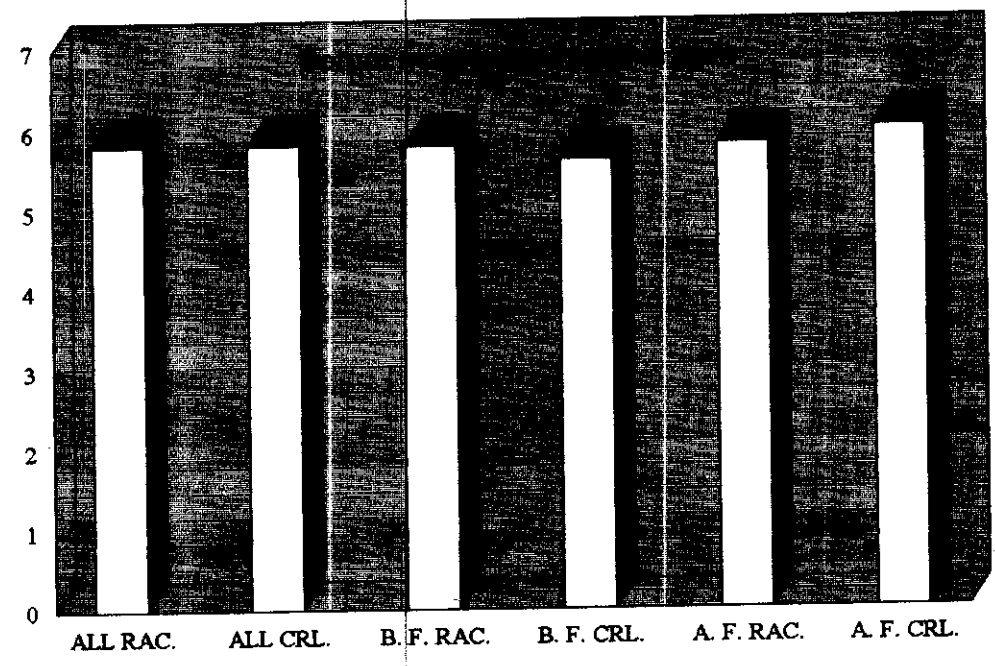

Figure 4. Mean serum alkaline phosphatase activity in different groups

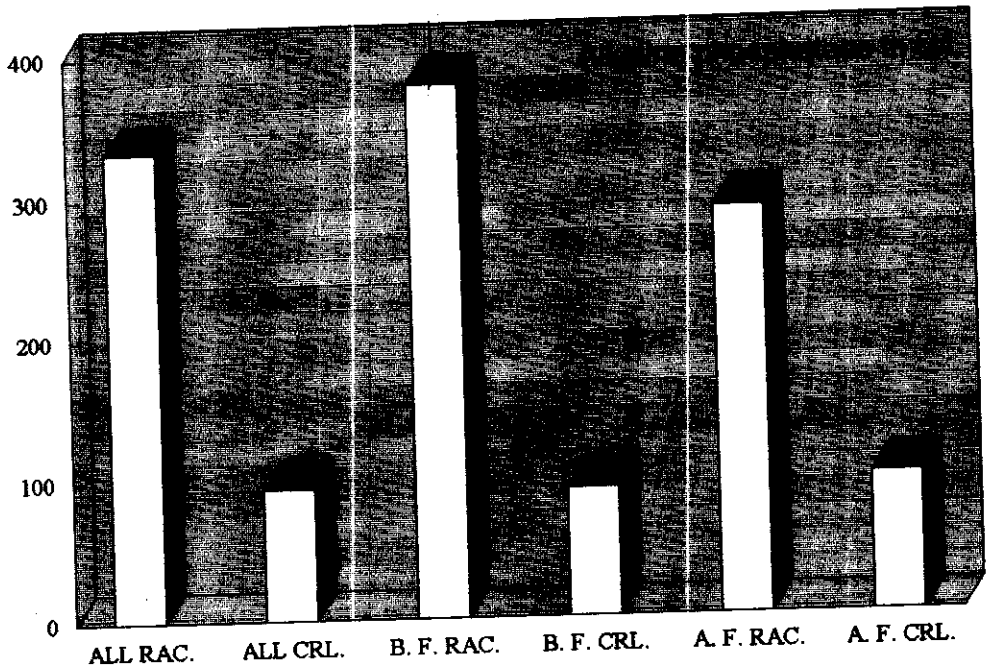

Figure 5. Mean serum calcium level in different groups

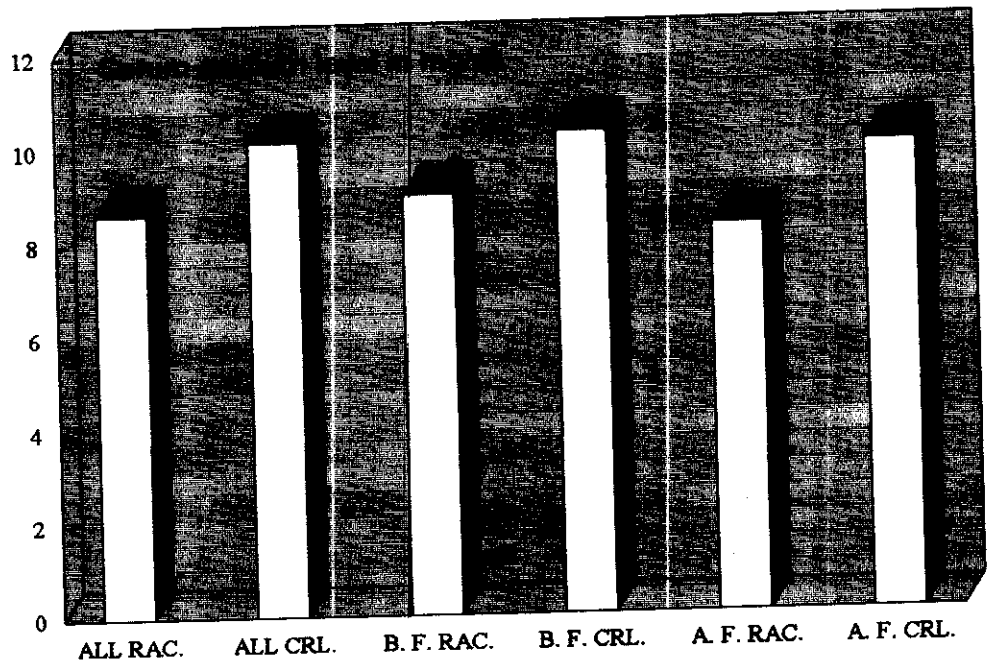

Figure 6. Mean serum inorganic phosphate in different groups

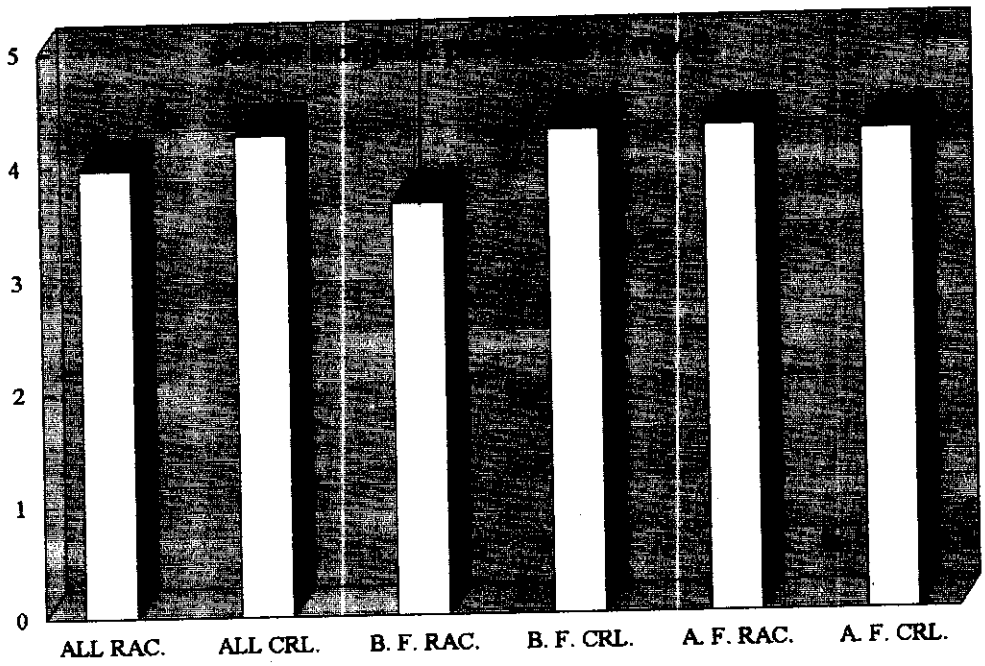

Figure 7. Mean zinc level in breast milk

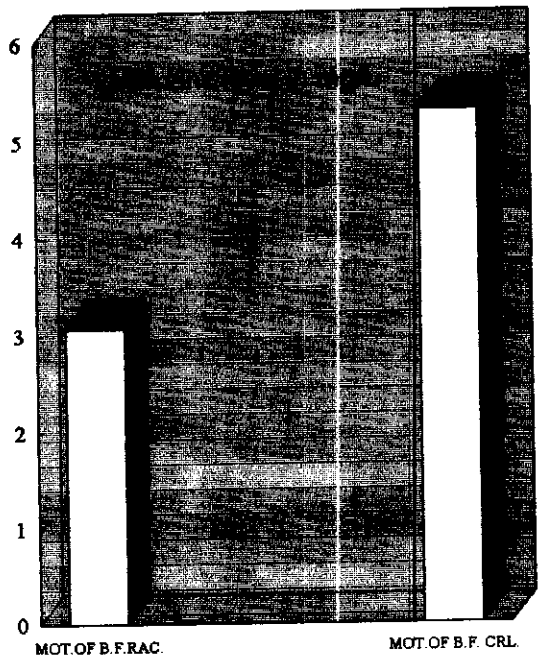

Fig. 8 Mean magnesium level in breast milk