SUMMARY & CONCLUSION
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38 malnourished infants and children with varying degrees of malnutrition and 10 control children were studied for the lipid profile (Serum total lipids, Serum total cholesterol and Serum free fatty acid levels) at the severe stage and during recovery phase after starting the dietary therapy. Children were classified into 4 groups according to Indian Academy of Paediatrics Classification of Malnutrition (1972). Children suffering from Primary liver disorders or diseases like Diabetes mellitus, Primary hypertension, Oedema, Renal disorders and Malaria etc., affecting the total lipids or its fractions were not included in the control as well as the study group. Serum Total Lipids, Total Cholesterol and Free fatty acid levels were investigated in the malnourished children, on the day of admission, 10th day and then on 20th day of starting dietary therapy.
Serum total lipid levels were estimated by Phosphovanilline method (Span Diagnostic Kit, Art. No. 926), serum total cholesterol levels by Henley’s method (1957) and serum free fatty acid levels by Millian Novak’s technique (1965).

In the present study, the mean age of marasmus group, marasmic kwashiorkor group and kwashiorkor group was 23.19, 23.60 and 31.00 months respectively. The mean weights in the above groups were 5.48, 5.65 and 8.70 kg respectively. All malnourished children showed a significant rise in their weights throughout the period of study and their rate of weight gain was 14.41, 9.66 and 5.57 gm/kg/day in marasmus, kwashiorkor and marasmic kwashiorkor respectively.

Serum total lipid levels in all the malnourished groups (593.92, 420.45 and 401.90 mg/dl in marasmic, marasmic kwashiorkor and kwashiorkor groups respectively) were significantly lower than the levels in the control group i.e. 666.12 mg/dl. During follow up, in the marasmus group, the total lipid levels showed a significant rise on 1st follow up, as levels came to 620.93 mg/dl, and then
there was an insignificant fall on 2nd follow up. In kwashiorkor group, total lipid levels rose significantly on 10th day of therapy and came to control level on 20th day. In the marasmic kwashiorkor group the levels rose significantly and came to the control level on 10th day.

In the present study, serum total cholesterol levels in marasmus, marasmic kwashiorkor and kwashiorkor groups were 148.76, 118.08 and 104.81 mg/dl respectively, which were significantly lower than that in the control group value (166.25 mg/dl). The total cholesterol level in the marasmus group was significantly higher than in the kwashiorkor and marasmic kwashiorkor groups. After starting the dietary therapy, serum cholesterol levels in the marasmic group came to the control level on 10th day. In the kwashiorkor group, the level rose significantly on 10th day and crossed the control levels and remained so till 2nd follow up, whereas in the marasmic kwashiorkor group, the levels came to the control level on 2nd follow up.

Serum free fatty acid levels in the kwashiorkor and marasmic kwashiorkor groups were 0.993 and 0.774 mEq/l respectively, which were significantly higher than the control and marasmic group levels of 0.495 and
0.505 mEq/l respectively. In the marasmic group, after starting the dietary therapy no significant changes in the free fatty acid levels were found. Kwashiorkor and marasmic kwashiorkor children showed a significant fall in the free fatty acid levels on 10th and on 20th day.

Serum albumin levels in all the malnourished groups (3.29, 2.23 and 2.16 gm/dl in marasmus, marasmic kwashiorkor and kwashiorkor groups respectively) were significantly lower than those in the control group (4.06 gm/dl). Serum albumin levels in pre-treatment stage/marasmic group were found to be significantly higher than the levels in kwashiorkor and marasmic kwashiorkor groups. Serum albumin levels in marasmic children rose significantly to reach the control level on 1st follow up, after starting the dietary therapy. By 20th day the serum albumin levels came to the control levels in kwashiorkor and marasmic kwashiorkor children.

TO CONCLUDE -

- In this Bundelkhand region, marasmic kwashiorkor forms a major malnourished group.

- Weight of the child alone is not a good index of assessing the severity of malnutrition.
- Anthropometry, clinical presentation and biochemical changes form the ideal combination for assessing the severity of malnutrition.

- Kwashiorkor is the severest form of malnutrition, as lipid profile is maximally disturbed.

- After proper dietary treatment, though the abnormal lipid profile of malnourished children improve by 20th day, these children still remain grossly underweight and retarded in growth and development.

- Marasmus is the compensated form of malnutrition, where lipid profile is minimally disturbed.

- Marasmic kwashiorkor is a group showing a mixed pattern of changes in the lipid profile, but pattern is more close to the kwashiorkor group at the severe stage as well as during the recovery stage.

- Regression of biochemical changes to normal is the first indication of recovery from malnutrition state.