

## Management of Protein-Calorie Malnutrition with Liv.52 as an Adjuvant

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Nutrition is a very major national problem and much more so in overpopulated developing countries. Growth and development of children of all age groups especially of the new-borns and infants depends mainly on correct nutrition. Malnutrition is most prevalent in the child population of India and it is the most important factor responsible for the incidence of morbidity and mortality in these and other age groups. It lowers the physical and physiological resistance and increases individual susceptibility to the disease. Malnutrition is a very wide term and covers many aspects but mainly deals with qualitative and quantitative under-nutrition. Protein-calorie malnutrition is very common in Rajasthan. It may be the secondary effect of inadequate dietary intake of either qualitative type of proteins or from diseases which may exert a variety of effects on organisms. Dietary surveys reveal that malnutrition is rampant in the infant and toddler population in our country.

Liv.52 has been favourably reported in the management of anorexias of varied aetiology and also as an anabolic agent provided the diet is of a suitable quality and quantity. It has been reported by Athavale (1966) and Indira Bai (1970) and others to improve appetite and bring about a feeling of well being, and gain in body-weight, thus indirectly encouraging normal growth in children.

Each ml of Liv.52 drops (Himalaya Drug Co.) contains:

Exts:	Capparis spinosa	17 mg
	Cichorium intybus	17 mg
	Solanum nigrum	8 mg
	Cassia occidentalis	4 mg
	Terminalia arjuna	8 mg
	Achillea millefolium	4 mg
	Tamarix gallica	4 mg

Prepared in the juices and decoctions of various hepatic stimulants.

Experimental and clinical studies also support the presumption that it improves hepatic function.

### MATERIAL AND METHODS

Fifty children of protein-calorie malnutrition in different age groups upto the age of ten years were selected for this study from a group of children admitted in the Paediatric Department of the General Hospital, R.N.T. Medical College, Udaipur. All these children admitted had a body-weight less than 90% of the expected weight. Each child was clinically examined and its nutrition status assessed. The necessary laboratory investigations were carried out and the diagnosis of protein-calorie malnutrition was firmly established. The nutritional status and the physical examination were carried out weekly for the first four weeks and then monthly for three months and at each assessment, weight and calorie intake as calculated from the dietary intake of each patient were noted. Three patients expired, two absconded and two left against medical advice - finally leaving 43 patients.

	Cases
Below one year	12
1 - 5 years	28
5 - 10 years	3
Total	43

Males	22
Females	21
Total	43

Liv.52 was administered in doses of 10-20 drops t.i.d. and in some cases q.i.d. regularly and daily for the duration of the period of study. It was observed that weekly and monthly gain in weight ran parallel to the total calorie intake in each case.

Thirty-three patients could be followed up for three months. Appetite and the feeling of well-being improved in a majority of cases. In the first two weeks 31 patients showed gain in weight, 10 were static and two showed slight loss in weight. Out of the thirty-three cases who showed gain in weight, twenty-two showed gain upto 1 kg, seven upto 1-2 kg and four between 2-3 kg. The calorie intake increased from 50 to 200 calories in three weeks and after that the increase varied from 50 to 330 calories. In three months there was a further increase in weight from 1 to 1.3 kg and the calorie intake from 220 to 550. Eight had static weight and calorie intake and two cases lost weight.

All the children were weighed on the beam type of weighing machine. All the patients were given hospital diet according to age and desire. There were three combinations - (i) milk only (ii) milk and khichdi and thuli (iii) milk and chapati and pulses in addition to green leafy vegetable, soup ½ cup daily and biscuits. Calorie value of the food intake had been assessed by the weighment method and the standard calculations.

No. of cases	Gain in weight		Gain in calories	
	3 weeks	3 months	3 weeks	3 months
Total: 33				
22 gained below 1 kg	0.2 to 1 kg	0.4 to 1 kg	50-200 calories	50-330 calories
7 gained 1-2 kg	0.55 to 0.7 kg	1 to 1.31 kg	100-200 calories	200-550 calories
4 gained 2-3 kg	0.4 to 1.9 kg	1.7 to 2.7 kg	150-200 calories	350-600 calories

The results of the study clearly show that Liv.52 (drops) administered in a adequate dosage helps to improve the appetite and increase food and calorie intake in uncomplicated cases of protein-calorie malnutrition. The children who gained in weight were more alert and active and showed a sense of well-being much to the pleasure of their parents. There were no toxic effects.

## **SUMMARY**

1. Fifty cases of protein-calorie malnutrition were studied for the effects of Liv.52 drops as an additional therapy.
2. All the children received a diet calculated in calories and were observed weekly for the first four weeks and then in the second and third months. Seven children were lost to study due to discharge and death.
3. Thirty-three children followed up for three months showed gain in weight. Eight were static and two lost weight.
4. Liv.52 drops improved appetite and increased dietary and calorie intake.
5. There were no toxic effects.