

## **A Clinical Study of the Effect of Liv.52 on the Growth Pattern of Normal and Malnourished Children in a Rural Area - 310 Cases**

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Growth is considered a reliable index of the state of health of a child and a steadily progressive trend in its weight is a very healthy sign. Most infants show a good growth curve during the first few months when they are on adequate breast milk but later the growth declines due to varied reasons which include inadequate quantities of breast milk, lack of supplementary food, certain superstitions and the inability to supply adequate nourishment due to poverty and ignorance abound, there is a high incidence of malnutrition in the areas.

Keeping all the above factors in view, a clinical study was undertaken in a rural area to observe the difference in growth patterns in normal and malnourished children on Liv.52 supplementation compared with that of normal children without medication; this work having been done earlier by workers of the same institute in the same villages.

### **MATERIAL AND METHODS**

This clinical study was undertaken under the joint auspices of the Indo Dutch Child Welfare Project and the Unit of Social Paediatrics, Institute of Child Health, Niloufer Hospital. The site selected for the study was Shankerpally, which is about 25 miles away from Hyderabad city. The villages selected were 6 in number belonging to Chevella Block of Hyderabad District.

These villages are within a radius of 1- 5 miles from the central village of Shankerpally. At the time of study, the area had a total population of 7944, distributed in 475 households. The main occupation of the villagers was cultivation (about 80%), while less than 15% were engaged in other professions. As per estimates made, their monthly income ranged between Rs. 60 - Rs. 100. The majority of mothers who attended the clinics were illiterate.

Their food habits consisted of 2-3 meals per day which contained mainly jowar roti along with dal or tamarind chutney with meagre quantities of vegetables. Milk, meat and other protein-rich foods were rarely consumed, if at all. Breast-feeding was continued up to the age of 2 years or even more, unless there was a younger sibling to attend to. The majority of mothers did not start their children on solid foods till they were 1½ or 2 years old. A few children were weaned before 1 year of age due to inadequacy of breast milk but these children were given supplements of buffalo's milk in very high dilutions and at infrequent intervals as most of the mothers were working. The caloric intake of most of the children was below normal requirements.

The present study was started in the month of August 1971 and the centre of study was limited to Shankerpally and the surrounding villages. Visits were made to the villages every week on Wednesdays. The cases of study were divided into groups, as follows:

Group A consisted of apparently normal children on Liv.52 - 36 cases.

Group B consisted of children with protein-calorie malnutrition of first or second degree and on Liv.52 - 149 cases.

Group C consisted of children with protein-calorie malnutrition as in group B but on protein packets only - 100 cases.

Group D consisted of children on protein packets + Liv.52 - 25 cases.

Total: 310 cases.

The ages of these children ranged between 3 months to 5 years (age was calculated by referring to a pre-tested local events calendar specially designed by workers of this institute). Weights were taken on a beam actuated balance - Delecto, which records weight correctly to 0.1 kg. The weights were taken at the time of starting the study and subsequently weights were recorded weekly for a period of 6 weeks after administering Liv.52 (Himalaya). The dose of Liv.52 was as follows:

0 - 6 months	5 drops t.i.d.
6 - 12 months	10 drops t.i.d.
1 year and above	15 drops t.i.d.

A weekly assessment of the clinical state and the development of any complication or serious side-effects was simultaneously noted. The mothers were questioned about the condition of the children and as to whether they observed any differences in their physical and mental responses. It was seen that the diet of these children remained the same throughout the study period except when otherwise stated.

## RESULTS

The results of the study were as follows:

Group A consisting of normal children on Liv.52 supplementation. Total number of cases studied: 36 cases. Age group range: 3 months - 5 years.

Agewise distribution of cases

0-6 months	8 cases
6-12 months	16 cases
12-24 months	9 cases
24-36 months	2 cases
36-48 months	1 case
48-60 months	0 case

Mean Gain in Weight in Group A: 0.81 kg.

Group B consisted of malnourished children on Liv.52 supplementation. Total number of cases studied: 149 cases. Age group range: 1 - 5 years.

Age distribution of cases

12 -24 months	39 cases
24 -36 months	66 cases
36 -48 months	39 cases
48 -60 months	5 cases

Mean Gain in Weight in Group B: 0.88 kg.

Group C consisted of malnourished children on protein packets without Liv.52. Total number of cases studied: 100. Age group range: 1 - 5 years well distributed. Mean Gain in Weight in Group C: 0.66 kg in 6 weeks.

Group D consisted of malnourished children on Liv.52 + protein packets. Total number of cases studies: 25. Age group range: 1-5 years well distributed. Mean Gain in Weight in Group D: 0.95 kg in 6 weeks.

From the results, it can be made out that there is a definite increase in weight in both normal as well as malnourished children on Liv.52 supplementation. the weight gain is slightly higher in the malnourished group of children. It can also be made out that this weight gain is definitely due to Liv.52 supplementation as can be seen in the earlier comparative growth study with normal children of the same area.

Clinically, the group of children receiving Liv.52 showed a good deal of improvement by the end of 3 weeks. There was an increased alertness and the children became brighter and more active and started showing an increased interest in their surroundings. All of them were keen to continue with the supplementation and the mothers also found a great deal of change in the condition of the children and attended the clinics regularly. Most of them found that their children showed an increase in appetite and an increased food intake. Side-effects, if any, were minimal and consisted only of slight looseness of the bowels which was mostly automatically controlled, only very rarely needing anti-diarrhoeal drugs. There was no need to stop the supplementation in any case, because of side - or toxic-effects.

It can be seen from Table I that the gain in weight with protein packets and Liv.52 is more rapid when compared to that of Liv.52 alone or protein packets alone. Children receiving Liv.52 and protein packets showed rapid gain in weight and the oedema disappeared within a week with an earlier return of appetite. The mental apathy and diarrhoea also showed improvement in the first week. Thus Liv.52, if used as an adjuvant in the treatment of malnutrition, has additional advantages. In this study children with malnutrition who had some infections or infestations were excluded. Only those children with pure protein-calorie malnutrition of first or second degree were selected. There were no side-effects when Liv.52 was used in addition to protein packets. The food intake of these children increased and the children started showing improvement at the end of the very first week. Thus, Liv.52 in addition to protein packets cuts down the duration of illness and hastens recovery.

**Table I :** Showing results in the cases studied

	Normal (without medication) previous study	Normal on Liv.52	Malnourished on Liv.52	Malnourished: on protein packets	Malnourished on protein packets + Liv.52
Total No. of cases	1068	36	149	100	25
Age group	1-4 years	1-3 years	1-5 years	1-5 years	1-5 years
Mean gain in weight	0.63 kg	0.81 kg	0.88 kg	0.66 kg	0.95 kg

In conclusion, it can be said that Liv.52 is a very good anabolic drug and probably the safest and most economical one which can be used in malnourished children - more so for those children who are suffering from mild and moderate degrees of malnutrition. It is free from any side or toxic-effects.

## SUMMARY

A clinical study was conducted on the effect of Liv.52 on the growth patterns of 310 normal and malnourished children and these are compared with those of normal children, without any supplements in a rural area. The effects of Liv.52 alone, protein packets only and Liv.52 plus protein packets supplements were studied and assessed. The mean weight gain in these groups was noted at

weekly intervals for six weeks. The Table shows the results in 310 cases studied in the various groups: one group of normal children, the other three groups of malnourished children with first or second degree of malnutrition - Group B with Liv.52, Group C with protein foods and Group D with protein foods and Liv.52. The results are compared with 1068 normal children from the same area. The gain in weight is shown in the Table.

Briefly, it can be said that Liv.52 has a definite anabolic action both on normal children and malnourished children. Liv.52 is a drug with minimal side-effects and proves a valuable adjuvant in the treatment of weight loss and impaired appetite in apparently normal children and also in malnourished children. Liv.52 can be safely given to all children as an anabolic agent.

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