

Liv.52 in Sub-Optimal Growth

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Some children fail to grow at a normal rate. The sum total of anabolic and catabolic processes increase or decrease growth. Growth is defined as a physical increase in size. Every child has its own pattern of growth. In children the first two years of life are characterised by rapid growth followed by steady progressive increase upto ten years of age. Some children grow very poorly and when the growth is less than the average required for the year it is termed as sub-optimal growth. One of the important factors responsible for this sub-optimal growth is low-caloric, low-protein diet over a prolonged period resulting in a poor nitrogen balance.

Liv.52 in various scientific studies is known to have an anabolic effect^{1,2}. This anabolic effect may be due to increased food consumption and the efficient utilisation of food which helps nitrogen retention. If the anabolic effect is only due to the increased food consumption by increasing the appetite the effect will not be seen after it is discontinued. To note whether Liv.52 has sustained anabolic action or not, this follow-up study was planned.

MATERIAL AND METHODS

For our previous study we had selected 55 children who were regularly attending our under-fives clinic. The children whose growth records were available for at least one year prior and who had failed to grow as required were selected for the Liv.52 study. Liv.52 was given for one year and the results published³. The same children were then followed-up for another year and their growth was recorded. All the 43 children, out of the 55 who came regularly, continued to attend the centre and we were able to follow up all of them.

Cases of malnutrition who were also included in our previous study stopped attending the special clinic after they recovered.

Only 11 cases out of 50 returned when called after one year.

OBSERVATIONS

Sub-optimal Growth Group: The age groups are noted in Table I. The majority was above the age of 3 years. After 2 years, growth slows down and the parents also notice that the growth rate is not adequate.

2 – 3 years	3.1 – 6 years	6.1 – 12 years	Total	
17	18	8	42	23 males
				20 females

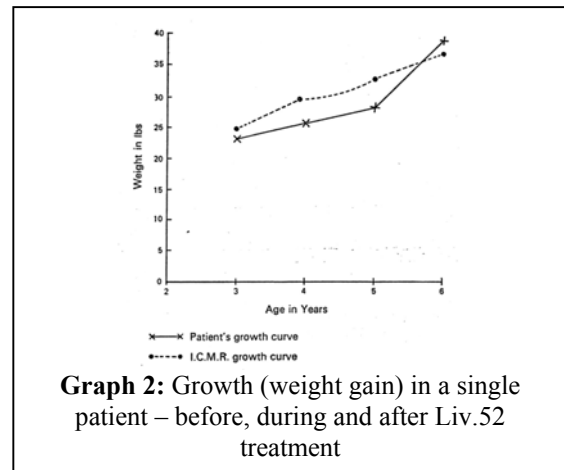
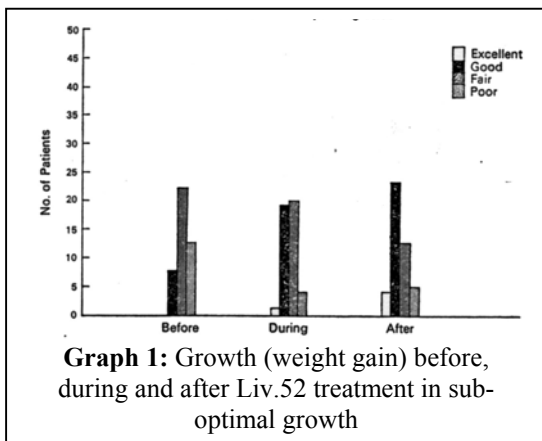
Table II: Shows the growth rate before, during and after Liv.52, each of one year duration

	Excellent	Good	Fair	Poor
Before	–	–	25	18
During	1	19	20	3
After	3	23	13	4

Criteria for grading:
 Excellent—Weight gain More than 6 lb/year
 Good — Weight gain Between 4–6 lb/year
 Fair — Weight gain Between 2–4 lb/year
 Poor — less than 2 lb/year

Table III: P.C.M. Group – (Follow-up) Age and sex distribution

Less than 1 year	1.1 – 3 years	3 years	Total	
4	5	2	11	6 males 5 females



Three children who showed poor response after Liv.52 were investigated completely for any congenital defects, chronic infection etc., but no abnormalities could be detected. The same 3 children continued to grow poorly and one more was added to the same group. The results are shown in Graphs 1 and 2.

DISCUSSION

Sub-optimal growth in children from the low income group could be due to a chronic low caloric diet, leading to under-nutrition and a negative nitrogen balance. Increased appetite can only temporarily increase the growth by increased consumption of food. The sustained effect even when Liv.52 is not given for one year cannot be explained in the same manner. The anabolic effect, as demonstrated by Kulkarni *et al*⁴, which corrects the negative nitrogen balance can explain the continued increase in the growth. The corrected nitrogen balance helped a large number of children to increase in height as well as weight. In those who showed fair to excellent response the range of increase in height varied from 5-12 cm.

Incidentally we noted that with improved nutrition and growth, the incidence of inter-current illnesses was also much less. As this was not a part of the study we did not record all details. These also can add to the improved growth.

Inadequate growth of their children is a common complaint of many mothers. When all organic causes for growth failure are excluded, Liv.52 can safely be given in such cases instead of any hormones which can be harmful due to their side effects.

In the 3 years follow-up period no untoward androgenic effects were noted in any case. We feel that in cases of sub-optimal growth Liv.52 is a safe, palatable and successful remedy. If the inadequacy in growth is corrected early enough then perhaps the ultimate growth can also be favourably helped.

Eleven cases from the group protein-calorie malnutrition were all normal on follow-up examination and they did not have any complaints.

As shown in Table IV all these patients showed excellent weight and height gain during Liv.52 therapy. With proper dietary advice coupled with the anabolic effect of Liv.52, the average weight and height gain remained excellent, even after discontinuing Liv.52.

Table IV: Average weight and height gain				
No. of patients	During Liv.52		After Liv.52	
	Wt.	Ht.	Wt.	Ht.
11	6.0 lb.	2.6''	6.2 lb.	4.2''

To conclude, we feel that Liv.52 is a useful anabolic agent which can be safely used in cases of sub-optimal growth. After initiating, growth continues to increase along the normal pattern.

How long Liv.52 should be administered to have this effect can be found by carrying out short-term intermittent trials and long-term follow-ups.

REFERENCES

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