

Malnourished children and Liv.52

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ABSTRACT

The main cause of malnutrition is poverty and deprivation, which result in physical and developmental stunting. There are, however, long-term complications of malnutrition which prevent the child from developing intellectually and behaviourally.

Sixty malnourished children from a lower socio-economic class and between 1-3 years of age were divided into two groups. One group received the placebo while the other received Liv.52, an Ayurvedic herbal preparation reported to improve appetite, serum protein and liver function in children. The drugs were administered at a dose of 1 tsf. t.d.s. for 6 months. The results showed significant improvements in body weight, height, total protein, albumin and globulin levels in the Liv.52-treated group. Appetite improved remarkably.

The present study emphasises the significant role of Liv.52 in the management of malnourished children.

INTRODUCTION

The cause of malnutrition in childhood is mainly poverty¹⁻⁵. There is, however, an increasing awareness of the occurrence of malnutrition secondary to diseased states⁶, such as diarrhoea⁷, AIDS⁸, cancer⁹ and intrauterine growth retardation¹⁰. Martorell *et al*¹¹ showed a clear association between socio-economic status and stunting, i.e. severe growth retardation, as well as correlations even within gradations of poverty to eventual height deficits.

Height for age and weight for height are basic indices for defining a child's nutritional status. A decreased weight for height indicates an acute state of malnutrition; a decreased height for age, on the other hand, indicates that the child has, at some period, been chronically malnourished¹².

Malnourished children are clearly more susceptible to infection¹³. The consequent interaction of infection with malnutrition is, unquestionably, one of the major factors in the increased morbidity and mortality associated with Protein Energy Malnutrition (PEM). In 1973, Puffer and Serrano¹⁴ demonstrated that nutritional deficiency was associated with 60.9% of the deaths from infectious diseases.

The cell-mediated immune response is compromised in malnourished children. This is illustrated by the fact that the incidence of mortality from measles among malnourished children is four times that of well-nourished children¹⁵.

Malnutrition in childhood is, in fact, a continuation of an undernourished state begun in infancy or it may arise from factors that become operative during childhood. Fatigue, lassitude, restlessness and irritability are frequent manifestations. Anorexia is the commonest complaint in these children.

Treatment of such children poses a great problem because of anorexia, and forcing too much of food and vitamins will have a detrimental effect. With this observation in mind, a double-blind, placebo-controlled study was conducted to evaluate the efficacy of Liv.52, an Ayurvedic preparation, on malnourished children.

MATERIAL AND METHODS

Sixty male and female children between 1 and 3 years of age were selected for this trial. The children were from the lower socio-economic class with an average per capita income of Rs.84.50 ± Rs. 3.00. The main complaints of the parents were that the children failed to gain weight and suffered from digestive disturbances, restlessness and irritability.

The children were randomly divided into two groups of 30 children each. Before initiating drug treatment their weight, height, total protein, serum albumin and serum globulin levels were measured. One group received syrup Liv.52, while the other received an identical-looking placebo. The dose of Liv.52 and the identical-looking placebo was each 1 tsf, t.d.s. daily. The trial was conducted for 6 months. The diet given was identical in both the groups.

The children were followed up every month for 6 months. The weight, height and other biochemical parameters were reassessed at the end of 6 months. Children showing any signs of organ pathology were excluded from the trial. The initial values were compared with the final ones by using paired 't' test. Decoding was done at the end of 6 months.

RESULTS

When the children were selected for this trial and evaluation of their weight, height and other biochemical parameters was done, both the groups showed low total protein, albumin and globulin. But as this trial progressed, the children in the Liv.52-treated group showed significant improvement in appetite with improvement in height, weight, total protein, albumin and globulin (Table 1, Fig.1).

Children in the placebo-treated group also showed improvement in all the parameters but this was significantly less than in the Liv.52-treated group. There was no significant change in appetite in this group (Table 2, Fig.2).

DISCUSSION

For most of the world's children, however, the main cause of malnutrition is poverty and deprivation. Some of these children suffer severely enough to be hospitalised but the majority survive with critical physical developmental stunting. Reducing mortality from malnutrition is, of course, an important objective. There are, however, long-term complications of malnutrition, especially those that they may prevent a child from developing intellectually and behaviourally that accentuate the need for innovative and creative solutions to this critical problem.

Liv.52, an Ayurvedic herbal preparation, contains several useful herbs, some important ones being *Capparis spinosa* (Himsra), *Solanum nigrum* (Kakamachi), *Cichorium intybus* (Kasani), *Casia occidentalis* (Kasamarda), and *Terminalia arjuna* (Arjuna). Several clinical studies show that Liv.52 stimulates appetite in children¹⁶. There was marked improvement in appetite and weight gain in 72.2% cases as compared to the controls¹⁷. Addition of Liv.52 improved liver function and caused a rise in serum protein. Patients on Liv.52 gained weight better than those of the control group¹⁸. Children with hypoproteinaemia showed marked improvement with Liv.52¹⁹.

The present study corroborates the above findings on Liv.52. There was significant improvement in appetite in the Liv.52-treated group, which resulted in increased intake of food. Both body weight and height started showing significant improvements after a month and continued throughout the period of study. Irritability and restlessness were relieved. The biochemical parameters were assessed after 6 months and showed significant improvements in total protein, serum albumin and

serum globulin levels. The placebo-treated group, on the other hand, also showed marginal improvements which may be attributed to increased attention and regular follow-ups.

Table 1: Effect of Liv.52 on height, weight, total protein, albumin and globulin levels in malnourished children (n=30)

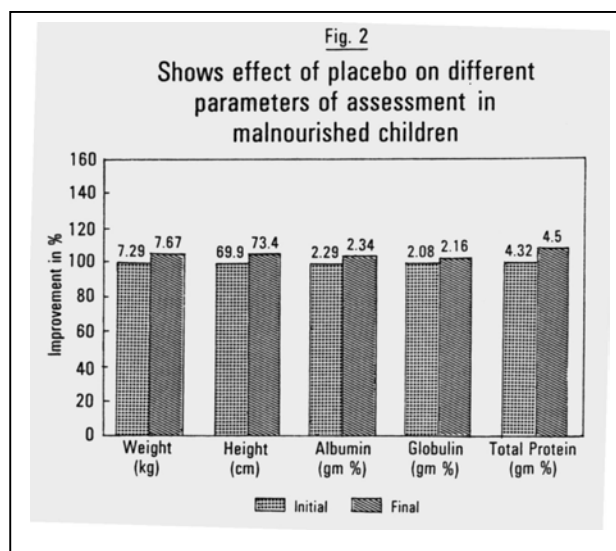
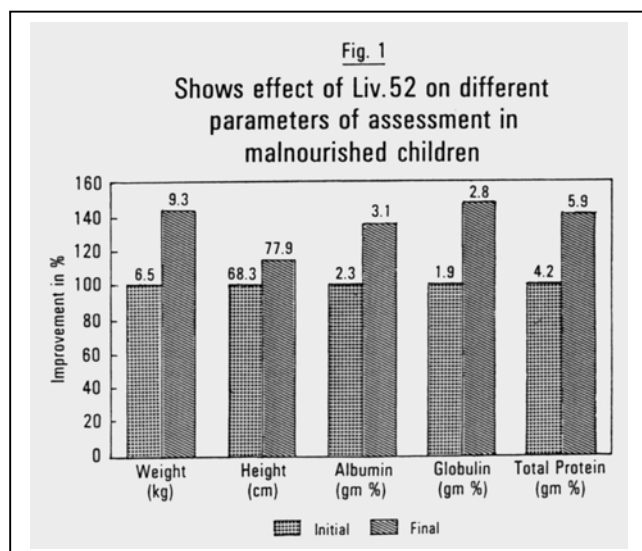
Sl. No.	Parameters	Initial	Final
1.	Height (cm)	68.30 ± 0.80	77.90** ± 0.40
2.	Weight (kg)	6.50 ± 0.10	9.30** ± 0.10
3.	Total Protein (gm%)	4.20 ± 0.01	5.90** ± 0.02
4.	Serum albumin (gm%)	2.30 ± 0.01	3.10** ± 0.01
5.	Serum globulin (gm%)	1.90 ± 0.03	2.80** ± 0.01

** $p < 0.001$ as compared to initial readings

Table 2: Effect of Placebo on height, weight, total protein, albumin and globulin levels in malnourished children (n=30)

Sl. No.	Parameters	Initial	Final
1.	Height (cm)	69.90 ± 0.97	73.40 ± 0.85
2.	Weight (kg)	7.29 ± 0.24	7.67 ± 0.23
3.	Total Protein (gm%)	4.32 ± 0.05	4.50* ± 0.06
4.	Serum albumin (gm%)	2.29 ± 0.03	2.34** ± 0.02
5.	Serum globulin (gm%)	2.08 ± 0.02	2.16* ± 0.03

** $p < 0.05$ as compared to initial readings



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