

Comparative Trial of Liv.52 and Orabolin in Marasmus

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In a child, hunger is one of the raw drives which promotes survival and adequate nutrition. Anorexia is a common complaint with which children are brought to the physician. The first five years of life are critical for growth and development. Food fads, social customs and infections may interfere with proper intake and absorption of the right kinds of nutrients. Thus, morbidity and mortality are high in the young below 5 years. For management of a child with poor appetite it is common practice to prescribe some multivitamin and mineral preparations or an enzyme compound to aid digestion. The drugs we choose must be harmless. Anabolic steroids have often been used for their nitrogen retention properties. The liver is a key organ concerned with appetite, digestion and absorption. A liver "stimulant" such as Liv.52 (Himalaya Drug Co., Bombay), a herbal preparation, has been claimed to have cholorectic and stimulatory properties, to revive lost appetite and to promote growth.

COMPOSITION OF Liv.52

1. Capparis spinosa (Hindi: *Kabra*, Telugu: *Enugadanta*). It is used for children with loss of appetite and scurvy.
2. Cinchorium intybus (Hindi: *Kasni*, Telugu: *Kasinivittulu*). It is useful in obstruction or torpor of the liver and in checking bilious enlargement of the spleen with general dropsy.
3. Solanum nigrum (Hindi: *Makoi*, Telugu: *Kamanchi chettu*). It is useful in inflammatory conditions and chronic cirrhosis of the liver and affections of the spleen.
4. Cassia occidentalis (Hindi: *Kasondi*, Telugu: *Kasinda*). It relieves spasm and helps in flatulence.
5. Tamarix gallica (Hindi: *Jhau*, Telugu: *Erusarumanu*). It is a mild laxative, is sweet and acceptable to children.
6. Terminalia arjuna (Hindi: *Arjun*, Telugu: *Tellamadio*). Action not known.
7. Achillea millefolium (Hindi: *Gandana*).
8. Mandura bhasma. This consists of iron salts.

MATERIAL AND METHODS

Children with weight loss than the expected for age were diagnosed to have marasmus. They had retardation of growth and anorexia. The majority belonged to the poor income group. Associated illnesses were treated and a diet containing milk, 1 egg, 1 plantain and other food items was given to make up the caloric requirements, at the rate of 50-70 calories per pound. A steady weight gain indicated adequacy of the diet. The observation period varied from 20-105 days, with an average of 40 days.

Four groups were formed. One was given Liv.52, another Orabolin (Organon), the third Liv.52 plus Orabolin and the fourth vitamins, in addition to the diet as described above for all the children.

RESULTS AND DISCUSSION

The comparative percentage weight gain is shown in Table 1 and in Fig. 1 and 2. 81% of cases were below the age of 3 years. This is also the age group most susceptible to cirrhosis, infections and diarrhoeal disease. Our study shows that Liv.52 promoted weight gain, which was similar to the rate of gain with Orabolin. Anabolic steroids have, however, several undesirable side effects including premature fusion of the epiphyses and it was heartening that a nonhormonal preparation made up of indigenous herbs was equally effective as Orabolin. Although a balanced diet alone could bring about a rapid gain in weight, the addition of Liv.52 (Fig. 2) was an additional help.

Table 1: Comparative percentage weight gain with Liv.52 and Orabolin

Liv.52	Orabolin
14%	12.5%
50%	41.6%
25%	53%
45%	34%
50%	25%
39%	15%
26%	21%
10.5%	
35%	
Average: 32.8%	29%

The mechanism of action of Liv.52 is not clear. The liver is the site of several metabolic processes including protein synthesis. If Liv.52 acts as a 'stimulant' for the liver cells, it might possibly promote protein synthesis from aminoacids provided by a balanced diet adequate in calories, proteins, minerals and vitamins.

It is possible that in families with a history of Indian childhood cirrhosis, the prophylactic use of Liv.52 in young children may help in prevention of cirrhosis, but there is no conclusive proof for this suggestion. In mice, Liv.52 does act as a protective agent against toxic agents.

SUMMARY

In a comparative study of the effect of Liv.52 and Orabolin, weight gain in marasmic children was comparable. The addition of Liv.52, besides a nutritious diet, helped in weight gain.

We thank Dr. N.R.V. Swamy, Superintendent, Gandhi Hospital, for permission to take up this study, and the Himalaya Drug Co. Bombay, for liberal samples of Liv.52.

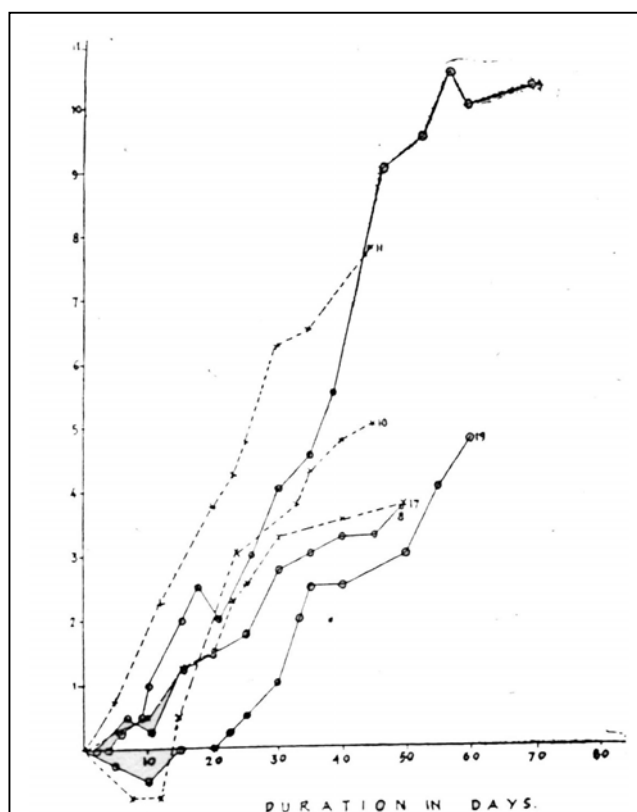


Fig. 1: (1) O—O lines represent the growth pattern with Liv.52.
(2) x-----x lines represent the pattern of weight gain of children with non-virilizing androgens (Orabolin)

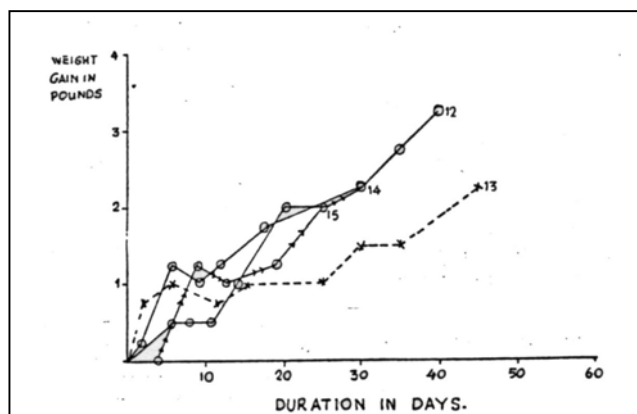


Fig. 2: (1) O—O lines represent the pattern of weight gain with Liv.52.
(2) x-----x lines represent the pattern of weight gain with diet and vitamins (control) (Case No. 13).