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Effect of Liv.52 in Anorexia of Hookworm Disease (A Preliminary Study)

Dutta, J.K., *M.B.,B.S. (Cal.), D.T.M.&H. (Edin.),*
(Post-graduate Training in Internal Medicine, U.K.)
Medical Superintendent, Balak Ram Hospital, Delhi, India.

Among the protean manifestations of hookworm disease, loss of appetite of varying degree is frequently observed. Appetite begins to return in such cases gradually after appropriate anthelmintic treatment and supportive therapy with iron and other haematinics. Since the indigenous drug Liv.52 (The Himalaya Drug Co.) has been well recognised in clinical practice as a valuable aid to improve appetite in anorexia of miscellaneous etiology, it was decided to try this drug and assess the effect in anorexia of hookworm disease exclusively.

MATERIAL AND METHODS

In Balak Ram Hospital 10 cases were studied to assess the effect of Liv.52 on anorexia of hookworm disease. All the patients were admitted as indoor patients. Patients showing hookworm ova in stool and complaining of loss of appetite were included in this study. After complete clinical examination, investigations like haemogram study, routine examinations of urine, X-ray examination of chest were done. Counting of hookworm ova by modified Stoll's technique (described in this article) was done before treatment in every case. Determination of haemoglobin by Sahli's method and total serum protein estimation were also done. Liv.52 was given 2 tablets thrice daily for 14 days. Other conditions likely to cause anorexia like liver disorders, tuberculosis, malignant diseases, severe cardiac lesions, were excluded by clinical examination and appropriate investigations before admitting the patients to the study group. Care was taken not to allow iron in any form, other haematinics, vitamin preparations or tonics during the trial which might in any way interfere with the evaluation of the result. Specific anthelmintic preparation for treatment of hookworm infestation was given only after the result of the study had been fully assessed.

Mapalstone and Mukherjee's modification of Stool's egg counting technique:

This method was used for counting of ova. 7 cc of water was taken in a test tube and the level was marked. Then 3 cc more of water was added in the test tube and the level was marked. Now water was thrown out. 1% NaCl solution was taken in the same test tube upto 7 cc. Then stool was added in small quantity till the level of solution came upto 10 cc. Now the fluid was mixed thoroughly. 10 cc of this solution was transferred to a container and 80 cc of 1% NaCl was added to make the total quantity 90 cc. If the stool is hard, the mixture may be kept overnight to soften properly. Now 0.15 cc was taken out of 90 cc of the mixture and placed on a slide and covered with a coverslip. Number of eggs in the entire field was counted. Number of eggs counted multiplied by 200 gave the number of eggs per gram of faeces.

Criteria for grading of result:

For grading of result, the subjective feeling of increase in appetite, general feeling of well-being and regaining of energy were taken into consideration. In order to have a more accurate assessment the number of chapatties each patient consumed at the end of therapy was compared with the number taken at the start of treatment. The result was graded as 'good', 'fair', 'poor' or 'failure'.

OBSERVATIONS AND RESULT

All the patients were adults. Their ages varied from 20 to 45 years. There were 4 females and 6 males. All of them came from rural areas around Delhi. They used shoes sparingly and some did not

use them at all. Open fields were used for purposes of defaecation. Most of the patients were farmers and labourers.

The symptomatology included pain in abdomen, diarrhoea or constipation, palpitation, dyspnoea on exertion, lack of energy for usual fieldwork. Loss of appetite was complained by all patients. In order to assess the degree of severity of anorexia, questioning of patients was made to elicit the number of chapatties the patients used to take in normal health and the number of chapatties being consumed since the present illness. No patient admitted suffering from geophagia. Puffiness of the face was seen in three cases. Haemic murmur was audible in seven cases.

Table 1: Showing the severity of anorexia in the group

Degree of anorexia	Number	Percentage
Severe	3	30%
Moderate	7	70%

Table 2: Showing inter-relationship between ova load, anaemia and severity of anorexia

Case No.	Ova count/g of faeces	Hb g/ 100 ml	Degree of anorexia
1	5400	4.5	Moderate
2	–	5.5	Severe
3	–	8.5	Moderate
4	10,000	2.5	Severe
5	800	8.75	Moderate
6	–	7.0	Moderate
7	1200	3.5	Moderate
8	600	3.5	Moderate
9	1500	4.5	Severe
10	400	3.0	Moderate

Table 3: Showing the result of therapy

Grading of result	Number	Percentage
Good	6	60%
Fair	2	20%
Poor or Failure	2	20%

Table 4: Showing inter-relationship between ova load, anaemia, degree of anorexia and result of therapy

Case No.	Ova count/g of faces	Hg-g/100 ml	Degree of anorexia	Result of therapy
1	5400	4.5	Moderate	Good
2	–	5.5	Severe	Failure
3	–	8.5	Moderate	Fair
4	10,000	2.5	Severe	Good
5	800	8.75	Moderate	Failure
6	–	7.0	Moderate	Fair
7	1200	3.5	Moderate	Good
8	600	3.5	Moderate	Good
9	1500	4.5	Severe	Good
10	400	3.0	Moderate	Good

DISCUSSION

To begin with, Liv.52 was given in dosage of 2 tablets, t.d.s., for one week to the first few patients but the response was not significant. So the dosage schedule was changed to 2 tablets thrice daily for 2 weeks which was followed for all the cases studied. In this group three cases suffered from severe loss of appetite while in seven cases it was of moderate degree. One patient (case No. 4) who

had severe loss of appetite had very low Hb 2.5 g/100 ml and ova count was 10,000 per gram of faeces. Fortunately he had good response with Liv.52 therapy. Case No. 9 who also suffered from severe loss of appetite had 4.5 g Hb per 100 ml and ova count was 1500 per gram of faeces. In this case also the response was good. Another patient (case No. 2) whose appetite was severely reduced had 5.5 g Hg/100 ml and ova count, though attempted, could not be successful probably due to inadequate number of ova. This patient failed to improve with Liv.52 given for two weeks. One more patient (case No. 5) who failed to improve had moderate loss of appetite with ova count 800/g of faeces and Hb 8.75 g/100 ml. The overall response was very satisfactory, as only 20 per cent failed to respond. Out of 80 per cent success rate 60 per cent had good response and in 20 per cent response was fair according to the criteria discussed earlier. Thus it can be safely concluded that Liv.52 alone, without any aid of haematinics and anthelmintics could make significant improvement of appetite in cases of hookworm disease. Since this was a preliminary study and probably the first study exclusively in hookworm disease in a limited number of patients, it may be worth conducting a controlled trial in a larger series in future.

The mode of action of this drug in anorexia of liver disease is considered to be improvement in liver functions. What precise mechanism operated in case of hookworm diseases is little understood. Presumably the response is based on general improvement of various metabolic processes and anabolic effect of the drug. A significant observation was that it could improve the appetite before reduction of worm load by anthelmintic treatment. No side effect was observed in any case.

CONCLUSION

In a preliminary study of ten cases of hookworm disease treated with Liv.52, improvement of appetite was observed in 80 per cent cases. No haematinics or anthelmintic treatment was given to any of them during the trial.

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