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The Use of an Anabolic Substance in the Treatment of Kwashiorkor

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The increase in the incidence of kwashiorkor in Bulawayo during the past few years has resulted in some difficulty in providing hospital accommodation for adequate treatment. The main factor in creating this difficulty has been the necessity for careful and prolonged dietary treatment in a unit in which there is always considerable pressure on bed space.

It was felt that the protein-sparing effect of an anabolic substance might be useful in accelerating the reversal of changes associated with kwashiorkor. We therefore decided to organise a limited controlled trial of the use of nor-androstenolone phenylpropionate (n-a . . p) ("Durabolin") in this condition.

Method

For three consecutive months (March-May, 1961) all cases of kwashiorkor admitted to the children's wards of this hospital were given standardised treatment. In addition, alternate unselected admissions were treated with an initial dose of 25 mg. of nanadrolene ("n-a . . p") by intramuscular injection, followed by 12½ mg. twice weekly.

Only cases which showed unequivocal features of kwashiorkor were accepted for the trial. The criteria for diagnosis were those usually accepted in kwashiorkor (Scragg and Rubidge, 1960; Trowell and Jelliffe, 1958) as follows:

(1) History of dietary protein deficiency.
(2) Oedema.
(3) Straightening and loss of pigmentation of hair.
(4) Characteristic dermatosis.
(5) Hepatomegaly.
(6) Diarrhoea.
(7) Irritability.
(8) Hypoalbuminaemia.

At least six of the above features of the disease had to be present before a patient was admitted to the trial. Altogether 36 patients were treated. Of these, 19 received "n-a . . p." (The inequality of numbers was due to poor co-ordination between wards and was not a result of selection.)

Standard Treatment

Diet

All cases were treated initially with Darrow's solution and skimmed milk, followed by graded solutions of skimmed milk, gradually introducing solid feeds.

Antibiotics

Tetracycline in a dosage according to weight was given to all cases for five days.

Additional Treatment

Intramuscular iron/dextran compound was given to cases with severe anaemia in either group. Apart from the initial course of tetracycline, additional antibiotics were given later in the illness, where indicated, for the treatment of infections.

Results

Mortality

Nine of the patients died (25 per cent. of the total treated). Of these, three died within 48 hours of admission.

Of the six patients who died later than 48 hours after admission, two were treated with "n-a . . p." The difference in mortality in the two groups is not significant.

Duration of Stay in Hospital (Survivors)

Treated with "n-a . . p" — 41.2 days average.
Not treated with "n-a . . p" — 42.2 days average.

Standard error of difference = 2.6. Therefore there is no significant difference between the two groups.

The duration of the stay in hospital of both groups was influenced by the frequency of intercurrent infection, including pneumonia, gastro-enteritis and measles. It is of interest to note that a smaller number of cases treated with "n-a . . p" developed intercurrent infections (six out of 14 cases treated, as compared with eight out of 13 untreated).

In order to assess the rate of recovery from kwashiorkor the time taken for the correction of oedema and dermatosis was estimated in each case.

Duration of Oedema

"N-a . . p"	11.5 days average.
No "n-a . . p"	12.9 days average.

Dermatosis (interval until marked improvement occurred)

"N-a . . p"	19.4 days average.
No "n-a . . p"	24.1 days average.

Serum Albumin

The serum albumin was estimated in each case before treatment and again before discharge from hospital.

Three of the patients treated with "n-a . . p" had a serum albumin level of more than 3 g./100 ml. before treatment, whereas eight of these patients showed a level of more than 3 g./100 ml. before discharge.

Of the group who received no "n-a . . p," six patients showed a level of more than 3 g./100 ml. both before and after treatment.

Discussion

The small number of patients treated in this trial does not allow any firm conclusion. Although it appears that the group treated with "n-a . . p" made a more rapid recovery on the average, statistical analysis shows that there is no significant difference between the duration of stay in hospital of the two groups. This also applies to the other criteria of recovery quoted (disappearance of oedema and dermatosis).

The effective treatment of kwashiorkor has become a major problem in hospital practice. Any new form of therapy which would hasten the process of recovery would be a welcome advance. Results of this trial of an anabolic substance show no firm indication that it is in fact such an advance in treatment. It should be noted that a more favourable impression o the results of using nor-androstenolone phenyl propionate has been formed elsewhere (Davi son, 1962). We can only conclude that a muc larger controlled trial would be necessary t reach a valid conclusion.

Summary

Thirty-six patients suffering from kwashiork were treated with a standard regime. Ninete patients were given nor-androstenolone phen propionate, an anabolic substance, in additio There was no significant difference in the r covery rate between the two groups.

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