Malnutrition in African Infants at Enkeldoorn, January, 1958 to August, 1958

BY

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A record has been kept of the cases of malnutrition in African infants treated at Enkeldoorn Hospital from January to August, 1958.

Attention has been paid to the number admitted, the number cured and the duration of stay in hospital.

The cases suffered from oedema of the body, straightening and discoloration of the hair and depigmentation of the skin. Most were brought to hospital by their mothers because of diarrhoea and general debility. The treatment adopted has centred around the use of a solution containing potassium chloride and sodium chloride in hyportonic proportions resembling Darrow's solution, and also containing lactose. Sulphaguanidine has been given for the diarrhoea and skimmed milk to restore the protein.

The formula of the "Darrows-like" solution was:

Potassium chloride	13 grammes
Sodium chloride	20 grammes
Lactose	30 grammes
Water (boiled)	5,000 c.cs.

It is essential that this solution is made properly, otherwise it is useless.

This solution was given throughout treatment and the results were found to be satisfactory. The following figures show the results obtained during the first three months of the year:

Cases admitted, 50; deaths, 9, recovered, 41; average stay in hospital, 11.1 days.

Average number of days spent in hospital on treatment was 11.1

The skimmed milk was given throughout the treatment. Once improvement was established, iron tonic (mist. ferri et ammon. citras) was added to the treatment.

Cases were discharged only when the oedema had given place to firm tissue and the infants were established on a normal diet containing milk, stew, mealie meal porridge (*sadza*), vegetables and brown bread.

At the beginning of April a mixture containing potassium but no sodium was given. It was made up in litres, each litre containing:

Potassium acetate	125 gm.
Potassium bicarbonate	125 gm.
Potassium citrate	125 gm.
Distilled water to	1,000 c.c.

Dose: one teaspoonful in black currant syrup three to four times a day.

This mixture was given alone in very bad cases and alternating with the Darrows-like solution in cases that were not quite so bad. It was given with vitamin C in the form of black currant syrup to make a drink. As a result of this new mixture, improvement became manifest much quicker than previously and the oedema subsided within two days of the start of treatment, and the duration of stay in hospital was reduced.

The figures from April to July with the new potassium mixture are shown:

Cases admitted, 17; deaths, 4; recovered, 12; absconded, 1; average stay in hospital, 7.5 days.

The only case admitted in June was in extremis on admission and failed to respond to treatment.

Average number of days spent in hospital on treatment was 7.5.

It will be apparent that the average number of days spent in hospital has dropped from 11.1 before the use of sodium-free potassium mixture to 7.5 after its use.

In August, 1958, a new addition to the diet was made. Vitamin B compound was added to the skimmed milk in the proportions of 10 c.c. of vitamin B compound in solution to one vaco-litre (40 oz. approximately) of skimmed milk. Vitamin B compound in a concentrated solution for injection was the only form available to us.

It is too early to quote sufficient figures to show whether the improvement with vitamin B compound is significant or not, but the cases treated in August seem to have responded to treatment quicker.

One case, Chipo, was admitted early in July and suffered from an intercurrent infection in the respiratory tract and nearly died on two occasions, and his condition was critical. On 2nd August the vitamin B compound addition was made and there was an immediate response

to treatment, with progressive improvement. Within twelve days he had regained normal tissue turgor, his hair was dark and the pigmentation of his skin was nearly back to normal, and as he was feeding well on a normal diet he was discharged from hospital. It is assumed that the addition of the vitamin B compound to the skimmed milk meant that the infant was getting the vitamin continuously throughout the day with each feed in a suitable dilution that was readily assimilated.

On 20th August vitamin A in suspension miscible with milk was added to the skimmed milk feeds, together with the vitamin B compound, and 30,000 units of vitamin A were added to each vacolitre (40 oz. approximately) of skimmed milk.

Though one cannot draw conclusions from a single case, it is noteworthy that infant Peter (hospital number 2338), in an advanced state of malnutrition with dehydration, was admitted in extremis on the 25th August. He was given 300 c.c. of Darrow's intravenous solution subcutaneously, using the hyalase drip method, and then the treatment as outlined above, together with the addition of vitamin A.

His improvement was dramatic, and on the 29th August—that is to say, within four days—he was fit and discharged home.

SUMMARY

A record has been kept of cases of malnutrition in African infants at Enkeldoorn Hospital during the first eight months of 1958. Good results were obtained by treating with skimmed milk and a Darrows-like solution, and this approach to the treatment was improved upon by the use of a sodium-free potassium mixture and the addition of vitamin B compound and vitamin A to the skimmed milk feeds.

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