Discussion

These results are considered to be worth recording in view of the findings of McFarlan, Crone, and Tee (1949). These workers studied the flora of the throat and rectum of infants in two maternity units, by cultural methods and by direct microscopical examination. They found a higher incidence of coliform bacilli in the artificially fed infants than in the breast-fed infants, and suggested that their methods might be applied to the investigation of neonatal diarrhoea. As a result of the present investigation we feel that, in babies suffering from enteritis, the direct microscopical examination of a film of faeces is of considerable value. A marked shift towards a Gram-negative flora is likely to indicate a severe degree of enteritis, probably with a bad prognosis. It cannot yet be decided whether a Gram-negative flora is the result of increased intestinal hurry or whether proliferation of Gram-negative organisms initiates diarrhoea.

The present study demonstrates the pronounced difference between the intestinal flora of the healthy breast-fed infant, the healthy bottle-fed infant, and the infant acutely ill with gastro-enteritis. Within recent years much work has been done on the synthesis of nutrients by intestinal organisms, and one would imagine that the nutrients synthesized by the lactobacillary flora would be very different from those synthesized by the heterogeneous flora found in the infant receiving artificial feeds. Moreover, the relative absence of lactobacilli from the stools of artificially fed infants might indicate a deficiency of certain factors in cows' milk which are perhaps essential not only for the growth of these organisms but also for the infant's adequate nutrition and resistance to infection.

Summary

Direct microscopical examination of faecal smears was made in 52 breast-fed infants. In 49 cases *Lactobacillus bifidus* was the predominant organism. Of direct smears from 46 artificially fed infants lactobacilli were scanty or absent in 33.

In faecal smears from 38 newly born infants the lactobacillus was predominant in all those over 6 days old.

Of 75 infants admitted to hospital with the diagnosis of enteritis, those showing a large proportion of Gram-negative organisms in their faecal smears were severely ill.

The possible relationship of the intestinal flora to the infant's health is discussed.

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The Ministry of Health has issued a revised edition of a booklet which originally appeared in 1942 on "The Feeding of Children from One to Five Years" (H.M.S.O., 6d.). It is intended mainly to advise on the feeding of groups of pre-school children in nurseries and elsewhere, but it may also be of help to individual parents and guardians. The normal and priority rations available to children are listed, and the booklet includes a number of useful recipes. The last section gives some homely advice on educating the child in sound feeding habits, making the point that the food should be attractive and varied, and served in as pleasant surroundings as possible.

CHLORAMPHENICOL AND THE VENEREAL DISEASES

BY

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"Chloromycetin," which is prepared from the cultures of *Streptomyces venezuelae*, has been synthesized and given the name chloramphenicol. It is supplied in capsules of 0.25 g. for oral use. Apart from its important effects upon the organisms of typhus and typhoid fevers, undulant fever, and primary atypical pneumonia, as has "aureomycin," it has considerable application in the field of venereology, for it has some action on most of the known venereal diseases.

The following case reports indicate that it is effective to some extent on the organisms of syphilis, gonorrhoea, and soft sore (chancroid).

Case 1: Sero-negative Primary Syphilis

A young male native from Nyasaland reported on September 30, 1949, with an indurated chancre of the prepuce and typical bilateral syphilitic inguinal glands. He had had the lesions for fourteen days, having contracted the disease two weeks previously. *Treponema pallidum* was found without difficulty, but the serum Wassermann reaction was negative. He was given three 0.25-g. capsules of chloramphenicol on the first day, and thereafter two capsules a day until he had had eleven in all (total, 2.75 g.) Although the dark field was still positive at 24 hours and again at 48 hours, it was negative at 72, 96, and 120 hours, and by the sixth day the sore had healed.

Case 2: Sero-positive Primary Syphilis

A male native of Southern Rhodesia had an indurated sore in the coronal sulcus of seven days' duration, and the left inguinal glands were enlarged and tender. *T. pallidum* was seen in the dark field and the Wassermann reaction of the blood was strongly positive. His most recent exposure to infection was only ten days previously, and it was considered likely that a chancroid infection had been superadded.

He was given three 0.25-g. capsules of chloramphenicol on the first day and subsequently one capsule twice a day to a total of seven (1.75 g.). The dark field was negative at 24 hours and again 48 hours after the onset of treatment, but by the third day the sore had healed. Meanwhile the inguinal glands had lost their tenderness within 24 hours.

Case 3: Secondary Syphilis

A young adult male native of Southern Rhodesia attended with scrotal ulceration and typical condylomata lata around the anus with mucous patches on the buccal mucous membrane, lips, and tongue. The dark field was teeming with *T. pallidum* and the Wassermann reaction of the blood was strongly positive. He was given three 0.25-g. capsules of chloramphenicol on the first day, followed by one capsule twice a day to a total of twelve (3 g.). The dark field was negative at 24 hours and the lesions had all healed by the ninth day. When he was used for demonstration purposes at a medical meeting on the eleventh day nothing abnormal was to be seen.

Case 4: Secondary Syphilis

Another male native of Southern Rhodesia also had obvious lesions of secondary syphilis with hypertrophic condylomata lata on the penis, scrotum, around the anus, and on the inner thighs. There was also a large papular rash. *T. pallidum* was readily seen in the dark field, and the Wassermann reaction was strongly positive.

He was given three 0.25-g. capsules of chloramphenicol on the first day, followed by one capsule twice a day to a total of eleven (2.75 g.). The dark field was negative at 24 hours and again at 48, 72, and 96 hours. The lesions healed very rapidly, and after a week he was discharged under observation.

Two cases of gonorrhoea—one simple and one complicated—were also treated with chloramphenicol.

Case 5: Simple Gonorrhoea

A young male native reported with a profuse purulent urethral discharge of seven days' duration, in a smear of which Gram-negative intracellular diplococci were demonstrated. The urine was hazy in both glasses; there were also two small sores on the glans penis, and the right inguinal glands were enlarged and tender. Dark-field examinations of material from the sores and the serological tests for syphilis were negative, and it was considered likely he had a superadded chancroidal infection.

He was given a single capsule of 0.25 g. of chloramphenicol, and 24 hours later there remained only a watery urethral discharge in which no gonococci could be found; the small sores had practically disappeared and the inguinal glands were no longer tender. Some urethral moisture persisted during the next three days, but no gonococci were seen in the smears. The urine, however, did not clear, and a microscopical examination revealed the eggs of *Schistosoma haematobium*, for which condition he was subsequently treated.

Case 6: Gonorrhoea Complicated by Prostatitis and an Abscess of Cowper's Gland

An indigenous native of Southern Rhodesia reported with a purulent urethral discharge of only two days' duration in which gonococci were found without difficulty. The urine was hazy in two glasses, and in addition there was an abscess of the left Cowper's gland, which had burst and was discharging. No gonococci were seen in smears taken from the abscess, although there was an abundance of pus cells. Rectal examination revealed an enlarged, boggy, tender prostate.

He was given one 0.25-g. capsule of chloramphenicol orally twice daily for three and a half days (total, 1.75 g.). The urethral discharge abated at once and urethral smears taken from the mucoid urethral discharge at 24 hours, or from the dry urethra at 48 and 72 hours, contained no demonstrable gonococci; by that time the urine was also quite clear. The abscess likewise rapidly healed, and a rectal examination performed before discharge, just six days after the onset of treatment, showed that the prostate had decreased markedly in size and was no longer tender.

Chancroid

Except for the unconfirmed examples of mixed infection already quoted there was unfortunately not enough of the drug available to employ on definite clinical cases of soft sore. However, advantage was taken of the experimental infection, for if 0.05 ml. of unsterilized fluid taken from a chancroidal bubo is injected intradermally it will produce within 48 to 72 hours a pustule which, if the patient is untreated, will assume the characteristics of a chancroidal ulcer. If, on the other hand, penicillin and sulphonamides are systemically administered while the condition is in the pustular stage ulceration will be avoided. Also if drugs curative to chancroid, such as penicillin, sulphonamides, streptomycin, and aureomycin, are given at the time of inoculation, the entire reaction is aborted, apart from an occasional non-tender papule at 48 hours.

Three of the above syphilitic patients treated with chloramphenicol were therefore inoculated with bubo fluid of proved virility immediately before their treatment with the antibiotic. The reactions on their arms were entirely negative. An additional case of granuloma inguinale was also treated, apparently successfully.

Summary

Four cases of early syphilis—one of sero-negative primary, one of sero-positive primary, and two of secondary syphilis—have been treated with 7–12 capsules (1.75–3 g.) of chloramphenicol over three to five days. In all of them dark-field examinations showed *T. pallidum* before treatment. In three the dark fields became negative within 24 hours and in the fourth at 72 hours. All of the lesions healed in an average of 6.25 days.

Two cases of gonorrhoea—one simple and one complicated by an abscess of Cowper's gland and prostatitis—were also treated with chloramphenicol with satisfactory results.

The drug successfully prevented the experimental inoculation of chancroid in three cases.

Although it is not suggested that the amounts given are necessarily curative, it is concluded that chloramphenicol is another powerful weapon in the treatment of venereal diseases.

The above work was carried out in the course of a venereal diseases investigation conducted for the Health Department of the Government of Southern Rhodesia, to whom due acknowledgments are expressed. I would like also to thank Dr. A. J. V. Wilkins, Medical Officer of Health, Salisbury, Southern Rhodesia, and the staff of the lazaretto for their assistance.

Medical Memoranda

Traumatic Enlargement of Clitoris

The unusual appearance of the clitoris and the dexterity of the young patient in producing this effect are reasons for recording this case.

CASE REPORT

A girl aged 11 was seen one evening in the casualty department of the Radcliffe Infirmary, Oxford, suffering from a tender swelling of the vulva. On questioning, she said that she had felt some discomfort whilst at school in the morning of the day of admission, and on going to the lavatory noticed a swelling. The swelling had not been present on the previous day, nor had she injured herself in any way. Since the morning the swelling had increased in size, making walking or playing games difficult, and she had been sent home from school during the afternoon. She had no real difficulty in passing water.

The patient was a healthy well-developed intelligent child. Past history revealed that she had been admitted to hospital at the age of 5, suffering from traumatic asphyxia after being

knocked down by a lorry. She slept with a younger sister aged 4. She enjoyed the companionship of other children but on the whole preferred to read books by herself.

On examining the vulva a tense swelling, deep red in colour and at least 1 in. (2.5 cm.) in diameter, arising from the region of the clitoris was seen. Further examination was limited by the tenderness of the swelling and the nervousness of the patient. The diagnosis to my mind lay between strangulation of the clitoris, haematoma of the clitoris, and prolapse

Photograph showing the appearance of the clitoris after the constriction had been released.