Healing was most pronounced in the lesions of secondary syphilis, and in these the response was as dramatic as that obtained with penicillin, perhaps even more so. One case is known to have relapsed.

It is very unlikely that the small doses given were curative, although 250 mg. given four times a day for a week might well be.

It is concluded that aureomycin has a marked action upon human syphilis and opens up a new field of therapeutic investigation.

The above work was carried out during the course of a venereal-disease investigation conducted for the Health Department of the Government of Southern Rhodesia, to whom acknowledgments are due. I would also like to thank Dr. A. J. V. Wilkins, Medical Officer of Health, Salisbury, Mr. Stephen Kennedy, and the staff of the lazaretto of that city for so freely offering facilities, and Mr. E. A. Boulter for his technical assistance.

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COMMON DIFFICULTIES IN INFANT FEEDING*

BY

R. S. ILLINGWORTH, M.D., F.R.C.P., D.P.H., D.C.H.

Professor of Child Health, University of Sheffield

One of the effects of civilization is the fact that a large proportion of human infants have become parasites on the cow. The extent to which American infants rely on cow's milk for nutriment was recently shown by Bain (1948), who states that in the North-Eastern region of the United States only 23% of all babies are fully breast-fed on discharge from maternity units. In this country the Population Investigation Committee (1948) revealed interesting geographical variations in the incidence of breast-feeding. While 24% of women in Southport were fully breast-feeding their infants at two months, 85% in Lewisham were: the corresponding figures for Cornwall and West Sussex were 45% and 80% respectively.

According to the Ministry of Health Report (1944) 80% of all babies born in hospitals in this country are discharged fully breast-fed, but 95% of those born at home are fully breast-fed at the same age. Read (1949) claims that 98% of 516 women treated by him with Waller's methods were fully breast-feeding their infants on discharge, and Waller (1946) found that 79.3% of 300 consecutive primiparae in a South London district were fully breast-feeding their babies at the age of 6 months. Kao (1948) found that 95% of 26,647 Chinese out-patients were fully breast-feeding their infants.

The most probable explanation of these wide variations lies in differences in the technique of management of lactation. The figures suggest that in some places difficulties in breast-feeding are either prevented or successfully overcome, while in others they lead to artificial feeding. Arti-

ficial feeding itself leads to other difficulties, which in turn are preventable.

The theme of this paper is the suggestion that a high proportion of the difficulties in infant feeding are man-made and preventable, and that the cause of them lies in the medical attendant rather than in an inherent defect in mother or baby.

Difficulties in Mutual Adaptation of Mother and Baby

The difficulties which arise in the mutual adaptation of mother and child in the first few days are basically due to the nature of the child, but birth injury may lead to irritability or inertia in the baby and so to difficulties in adaptation. The irritable baby (who has not had a birth injury) who screams when brought to the breast, or who approaches the breast normally and then immediately withdraws his head and kicks and cries, is made worse by attempts to discipline him.

Rigid rules about the duration and frequency of feeds which do not allow adaptation to the needs of the individual, or attempts to force the child to take food when he does not want it, serve only to increase the difficulty. The baby particularly resents efforts to hold his head or to keep the limbs at his side with the aid of tight clothes or a blanket. The irritability is still further aggravated by the unnatural system, which still has its advocates, of keeping the baby in a nursery away from his mother, of not allowing her to cuddle her baby, and of bringing the baby to the mother only at that time which is considered the right one for his feed. The mother's fondling and cuddling before a feed may go a long way towards soothing him and enabling him to take his feed more easily. These difficulties of the first few days have been ably described by Middlemore (1941).

Difficulties in the Mother

Many of the difficulties in breast-feeding arise from inadequate preparation of the mother during pregnancy. Some obstetricians take little interest in the preparation of the mother for breast-feeding, and few paediatricians are given access to the mother before her baby is born. It is the paediatrician, however, who has to help the mother to surmount the difficulties in the puerperium which may result from this neglect.

Some failures of lactation are due to the mother's lack of desire to feed her baby. This may arise from ignorance of the value of breast-feeding to the baby, from a mistaken idea of the greater convenience of bottle-feeding, or from a desire for greater freedom to visit friends and places of entertainment. She may be afraid of the recurrence of a sore nipple or mastitis experienced in a previous pregnancy. She may have been told that lactation will take a great deal out of her. She may fear that breast-feeding will spoil her figure or her clothes. She may have failed to breast-feed previous children and be convinced that she will fail again. Most of these doubts and misunderstandings can be removed by discussing them with the mother during pregnancy, explaining to her the advantages of breast-feeding to the baby and to herself, and impressing her with the pleasure and satisfaction she will derive from it.

Inadequate or improper preparation of the breast during pregnancy may be another factor of importance in causing failure of lactation. Waller (1946) advocates that the mother should be taught to express a few drops of colostrum once a day for the last two or three months of pregnancy. He has shown in carefully controlled experiments

*Read in opening a discussion in the Section of Child Health at the Annual Meeting of the British Medical Association, Harrogate, 1949.

that this practice reduces the incidence of sore nipple, overdistension, and other feeding difficulties in the puerperium. Attention to a depressed nipple during pregnancy may prevent difficulties later. The Woolwich plastic nipple shield* advocated by Waller will help to elevate such a nipple. Inadequate attention to the mother's diet and failure to treat her anaemia may also be factors in causing failure of lactation.

Social factors, which are also man-made, play their part in causing failure of breast-feeding. Overcrowding, lack of privacy, the necessity of living with relations, overwork in the home due to lack of domestic help, the necessity of return to work in industry, queueing for food, all have a deleterious effect on breast-feeding. A woman who lives in lodgings is often compelled to give her baby a bottle to quieten it. The grandmother is frequently the cause of the baby being taken off the breast.

Worry

Worry is an important factor in the failure of lactation. Delay in the coming in of the milk, or ignorance of the normal time of the coming in, may worry the mother. Careless conversation between doctor and nurse about the baby is a common source of worry to her. Routine test feeds and frequent weighings almost inevitably cause the mother to worry about her ability to feed the baby. They are very apt to mislead the doctors and nurses and cause them to give complementary feeds—which go far to convince the mother that she will not have enough milk for the baby. Even though the mother is not told the result of the test feed by the nurse, she may obtain the information she wants by other means. The frequent weighings and the obvious concern of the doctor whether there is enough milk for the baby suggest to her the likelihood of a deficiency of milk. Test feeds should be used only for specific indications, when a feeding difficulty arises which suggests that the baby is not receiving enough milk, and in these circumstances they are essential.

Mothers are worried by the practice still found in some hospitals of keeping the baby in the nursery instead of at her bedside. Fields and Rose (1948) and others have shown that a mother has a much better chance of breast-feeding her baby if he is kept at her bedside night and day and not in a nursery. When the mother hears crying at the other end of the corridor she fears that it is her baby and that he is not receiving the attention he demands. She wants to cuddle, kiss, and admire her baby, for whom she has been waiting so long, but she is not allowed even to see him except at feeding time, five or six times a day. She is not given a chance to get used to handling him—to change the napkin and bath him—and she worries about her ability to manage him when she gets home.

The early discharge from hospital, necessitated by shortage of beds and nursing staff, means that she is discharged before lactation is established, and when she gets home there is often a gap of several days before the midwife or health visitor comes to help her in her difficulties. The paediatric registrar from the maternity hospital ought to be able to visit her in her home and give her the advice which she needs.

Insufficiency of Milk

By far the commonest cause of failure of lactation is insufficiency of milk. In a considerable proportion of cases, however, insufficiency is wrongly diagnosed or results from mismanagement. Those doctors and nurses who wrongly rely on scales to provide the only guide to the

progress of the infant are often misled into giving complementary feeds when they are totally unnecessary. Many are ignorant of the normal rate at which milk comes in, and expect every baby to receive $2\frac{1}{2}$ oz. per lb. (19.4 ml. per kg.) from the first day, whereas frequently the mother can give only the equivalent of $\frac{1}{2}$ oz. per lb. (5.7 ml. per kg.) on the fourth day, $1\frac{1}{2}$ oz. (13.5 ml. per kg.) by the seventh day, and it is not till the tenth day or later that she can give the full $2\frac{1}{2}$ oz. per lb. required to give most babies a normal weight gain. Routine test feeds are done in some hospitals at every feed. They waste a great deal of the nurse's time and take her away from important nursing duties. In the home they waste the mother's time and inevitably lead to worry. I recently saw a child who had been given a test weighing at every feed every day for nine months.

Insistence on a rapid recovery of the physiological weight loss in the newborn period and on a rapid gain in weight is another potent cause of complementary feeding. Complementary feeds, if given unnecessarily, are apt to reduce the baby's desire for the breast and so to reduce the emptying of the breast, which in turn leads to failure of milk production. Some advise that a complementary feed in the newborn period should always be given by a spoon rather than a bottle because some babies may prefer a bottle to the breast. Certainly in the first week complementary feeding should be so exceptional that no nurse in a hospital unless specially trained should be allowed to give one without the permission of the paediatrician. Nurses and doctors worry unduly about the harm which will befall the baby if it does not gain weight normally in the first few days of its life. They pay too little attention to other signs of well-being in the baby—the appearance, tone, and contentment of the baby—and too much to the weight.

The commonest time for lactation to fail is about the tenth day, when the mother first returns to work in the home. The normal falling off of milk production at this time is only temporary, and if the baby is tided over this period and, if really necessary, given judicious and never excessive complementary feeds, milk production usually returns to normal in two or three days.

A common omission in the treatment of slight insufficiency of milk is failure to empty the breast by expression after feeds. The milk so expressed may be enough to make up for the deficiency in the baby, and the complete emptying of the breast stimulates it to greater milk production.

The stimulus to milk production is lost by two other bad practices: the giving of supplementary feeds, and the use of only one breast at each feed. In either case the effect is the same—incomplete emptying of the breast for long periods, with consequent decreased milk production.

Another potent cause of the failure of breast-feeding is the ready availability of artificial feeds. Much could be achieved for positive health by all the time and money which is spent by nursing, voluntary, clerical, accountant, and transport staff in supplying tins of milk. There would be much more breast-feeding of infants if artificial feeds were not so readily obtainable. I recall the story of a midwife who, when almost at term, was seen to collect twelve tins of dried milk from the clinic.

Care of the Breast

Mismanagement of overdistension of the breast is said by Waller (1946, 1947) to be one of the principal causes of the failure of lactation. Severe overdistension leads to involution of the breast and so to artificial feeding. It

*Made by Allen and Hanburys, Ltd.

causes severe pain to the mother, and this alone adversely affects the milk supply. The baby is unable to obtain the milk partly because he cannot get his jaws behind the nipple, and he will damage the nipple by sucking it. It predisposes to infection, and so to mastitis and abscess. The condition tends to be neglected in maternity units; stilboestrol is withheld until too late, and manual expression of milk to relieve the distension is often half-hearted and performed only once or twice, so that the breast is not emptied. Stilboestrol should be given promptly in cases of unduly rapid filling which causes overdistension. The dosage in the moderate case should be 5 mg. four-hourly. It is unusual to require more than three or four doses, and if the drug is continued longer than is necessary it will stop milk production entirely.

Soreness and cracking of the nipple is another difficulty in infant feeding which is usually preventable. They may be caused by the application of hardening agents to the nipple, such as spirit, and by scrubbing the nipple with a brush. Attempts to pull off dried secretions, instead of soaking them off with saline, may cause abrasions. They may be caused by leaving the baby to suck too long on the breast in the first day or two, before the milk comes in, or later by leaving the baby too long on the breast so that he sucks long after he has emptied the breast of milk. They are caused by allowing the baby to suck on a severely overdistended breast. They may be due to faulty hygiene.

A mature baby may approximate his jaws so tightly round the areola that he creates a vacuum, and if he is pulled off without first breaking the vacuum by insertion of the finger into the angle of his mouth he may damage the nipple. All too often the sore nipple is neglected and treatment is not given. If the slightest abrasion can be detected with the hand lens the baby should be taken off the affected breast and given the milk which is expressed at the ordinary feed times. Penicillin cream should be applied to the nipple, and the baby returned to the breast when in about forty-eight hours it is healed. Neglect of a sore nipple causes a great deal of pain and worry to the mother, and may lead to mastitis and abscess formation.

A breast abscess should be regarded as a disgrace in any maternity unit, and it will not be discussed here.

Difficulties in the Baby

Excessive Crying

This is usually considered to be a sign that the baby is not getting enough milk. That diagnosis is often correct, but it is more often wrong. Doctors and nurses are far too ready to diagnose insufficiency without any proof of the correctness of the diagnosis. It is a thoroughly bad practice to take the baby off the breast without confirming the diagnosis by test feeds.

Many other babies are taken off the breast on the grounds that the milk is not suiting him, is too rich, or is watery and not strong enough. These diagnoses are always wrong and should therefore never be made. I have recently seen seven babies who were put on to the bottle because it was thought that the mothers' milk looked watery.

The many other causes of excessive crying are often overlooked. One of the commonest is a rigid feeding schedule which takes no note of the needs of the individual. It is irrational to feed the baby strictly by the alarm clock. Such a method presupposes that babies are not individuals but are all alike. It presupposes that they have the same stomach-emptying time, the same degree of gastric acidity, the same temperament, and the same degree

of activity. It ignores the wide changes of temperature characteristic of the British climate. It ignores the fact that babies have rest periods and periods of activity, and that activity causes hunger and thirst.

Gesell and Ilg (1937) and Aldrich and Hewitt (1947) have done many babies a great service by advocating the self-demand schedule, a rational method of infant feeding now widely practised throughout the United States. I have never yet seen any difficulties arising from it, but I have seen it solve very many feeding difficulties which arose from rigidity of method. Even if one does not go all the way in allowing complete freedom for the baby to choose its feed time, one should certainly advise the mother to use considerable elasticity in the feeding schedule and adjust it so far as she possibly can to the needs of her child. She should not waken the child for a feed. She must realize that the smaller the baby the more often it is likely to want to be fed. She should not give fluids between feeds because it is crying for food; instead she should adjust the frequency of the feeds to the baby's requirements. She should certainly be advised to feed the baby in the night in the first month or two when he wants it. Refusal to feed the baby in the night is a potent cause of excessive crying and of loss of sleep to mother and father.

Other causes of excessive crying are overclothing, neglect, loneliness, and lack of cuddling. The worst case of prickly heat which I have seen in this country was that of a baby who was brought to me on a particularly cold winter's day for excessive crying. The child was grossly overclothed and sweating profusely. Tight clothes which prevent free movements of the limbs may cause a baby to cry. Failure to change the napkin when it is wet is an obvious cause of unhappiness. A very common cause of excessive crying is loneliness and boredom.

Many mothers have the entirely erroneous belief that they will spoil a baby if they pick him up when he cries. Some have learnt a little about what psychologists call "overstimulation." They certainly will not spoil him unless they carry it out to excess. In the older baby the crying is frequently due to nothing but boredom, the baby being left outside in the pram for many hours a day, often without any toys, when he has learnt new skills—manipulation, sitting, or standing, which he is not given the opportunity of practising.

Rigidity in the duration of the feed is another cause of excessive crying. Those who advocate a fixed time on the breast for all babies presuppose that all babies suck at the same speed and that all breasts are the same. The duration of the feed is an individual matter. It is wrong to instruct all mothers to feed their babies exactly ten minutes at each breast. After the first two or three weeks most babies obtain all the milk they want in about five minutes at each breast. A very common cause of wind and colic is leaving the baby to suck too long on a breast. When the breast is empty sucking inevitably causes air swallowing.

Still another manifestation of wrongful rigidity of ideas concerns the quantity of milk the baby should take. Many doctors ascribe excessive crying and other feeding difficulties in the breast-fed baby to overfeeding. If they do a test feed and find that it is getting more than 2½ oz. per lb. (19.4 ml. per kg.) they feel that their diagnosis is confirmed. This diagnosis is almost always wrong. I have yet to see a baby whose symptoms are due to its taking too much from the breast. Not all babies are satisfied with the normal 2½ oz. per lb., and not all babies will show a satisfactory weekly gain in weight on that amount. The baby knows how much he needs.

Further Difficulties

Inadequate Weight Gain.—This is by no means always due to insufficiency of milk. It may be due to dehydration from excessive clothing. I was recently asked to see a baby who would not gain weight in spite of the fact that he was receiving an adequate supply of milk and that no organic disease could be found. The temperature of his room was about 80° F. (26.7° C.). The baby was covered with fifteen layers of clothes, including four layers of blankets. When the baby was suitably clothed the weight gain was normal. Defective weight gain may be due to a low-grade infection of the umbilicus, skin, finger, or nose. It may be due to separation from the mother in hospital and consequent loneliness and excessive crying. It is hoped that all children's units of the future will cater for the admission of the mother to the same room as her baby. Just when the baby most needs his mother, when he is ill or in pain, he is deprived of her love and cuddling, and he is left alone more than he has ever been left before.

Diarrhoea.—I have recently seen six babies who were taken off the breast on account of diarrhoea. In each case the diarrhoea was due to the mother taking certain purgatives which affect the breast milk—senna, aloes, cascara, or rhubarb. Many babies are thought to have gastro-enteritis or some form of protein or carbohydrate dyspepsia because of loose green stools which in fact are due to constipation arising from severe underfeeding. Many other babies are thought to have diarrhoea when in fact their stools are the normal loose stools of the fully breast-fed infant. Gastro-enteritis is an extremely rare cause of diarrhoea in the breast-fed baby.

Constipation.—True constipation in a fully breast-fed infant is usually due to insufficiency of milk. In a large proportion of babies brought up for this complaint, however, the motions are normal, but the mother is worried about their infrequency. It is perfectly normal for some breast-fed babies to have a motion only every four to five days. If the child is well and gaining weight normally and the motions are not hard, no treatment of any kind is necessary. I saw an infant 24 hours old who had been given an enema by the doctor for constipation.

Vomiting.—Many babies are thought to be vomiting, whereas they are merely possetting or bringing a little milk up with wind. Many babies are taken off the breast on account of vomiting. This is always a wrong thing to do, unless the vomiting is due to severe flatulence arising from insufficiency of milk. I have recently seen seven cases of congenital pyloric stenosis in which the baby had been put on to artificial foods because of vomiting, it being thought that the breast milk was "not suiting" the baby. In every case the vomiting persisted.

Flatulence.—More often than not flatulence is thought to be the cause of the baby's excessive crying and other symptoms, and very often the diagnosis is incorrect. Flatulence may, however, be caused by leaving the baby to suck on the breast too long or by insufficiency of milk. The latter diagnosis should be confirmed by test feeds.

Other Man-made Difficulties in the Breast-fed Baby.—Soreness of the mouth and thrush may be caused by cleaning the mouth of the newborn with swabs or by giving the baby a "dummy." A variety of infections may be caused by inadequate hygiene. Prematurity, with all its associated feeding difficulties, may be due to poor nutrition, obstetrical procedures, and other factors. Inertia in the newborn, leading to difficulty in breast-feeding, may be due to obstetrical procedures and to improper use of analgesics. Some babies have to be taken off the breast because of admission to a

hospital which has no accommodation for a nursing mother. Others are taken off the breast on account of congenital haemolytic anaemia. Cathie (1947) showed that this was a wrong practice. Others are taken off unnecessarily because of the onset of menstruation.

Some Difficulties in the Artificially Fed Baby

Many of the difficulties which occur in the breast-fed baby also apply to the artificially fed baby. In addition certain special difficulties may occur.

Excessive flatulence and therefore colic is often due to the hole in the teat being too small. I saw a case of excessive flatulence of very recent onset in a 6-months-old baby: it was due to the fact that the mother had filled the feeding bottle with sago pudding and expected the baby to suck it out through the ordinary teat. Flatulence is also commonly due to leaving the baby to feed himself from a bottle propped up on a pillow. This causes him to swallow air for two reasons: he may create a vacuum in the bottle, and when the teat flattens in consequence he continues to suck it, so that he merely swallows air. It may also be due to the teat not being kept filled with milk, with the result that the baby swallows a mixture of air and milk.

Constipation is usually due to underfeeding. It may also be due to insufficiency of fluid or to failure to add sugar to those dried foods which do not contain added sugar, such as National Dried Milk.

Diarrhoea may be due to an infection such as gastro-enteritis or to adding sugar to a dried food which already has a high carbohydrate content. Diarrhoea must be distinguished from the loose green constipation stools already mentioned.

Vomiting may be due to improper mixing of the milk or to excessive flatulence. It is occasionally due to the hole in the teat being too large so that the baby gets the food down too quickly.

Failure to gain weight satisfactorily is usually due to underfeeding, but it may be due to infections or other organic disease. It may be due to measuring dried milk with a teaspoon which gives much less than the expected drachm (3.5 ml.), or to excessive dilution of the milk, either deliberately or because of the use of a tablespoon as a measure of $\frac{1}{2}$ oz. (14 ml.) (many tablespoons measure $\frac{1}{4}$ oz. (21 ml.) or more). It may be due to following the instructions on the packet instead of adjusting the quantity of food to the needs of the individual. Very exceptionally it may be due to overfeeding. Overfeeding on the bottle can occur, but it is rare. It is certainly not nearly as common as Gibbens (1949) suggests. He is quoted as making the assertion that nine-tenths of all diseases in infancy and childhood are due to overfeeding. In fact most babies know when they have had enough, and overfeeding is an extremely rare finding in infants. It must be remembered that some babies require more than the calculated requirement to make them gain weight normally.

A common practice in the face of these feeding difficulties is to change the feeds in order to try to find a particular food which will "suit" the baby. This is a bad practice. The modern dried foods are so good that any of them if given properly and in reasonable quantity will cause most babies to thrive. Some cause other than unsuitability of a particular brand of milk should always be sought for the child's symptoms.

Difficulties in Weaning

Most of these are due to mismanagement. The commonest difficulties arise from trying to force the baby to

take food which he does not want. A determined baby will not tolerate such forcing. Attempts to give solids before the baby can chew may lead to vomiting. When a baby refuses the food offered it is a good plan to offer him a breast-feed first and then try the solid food after the breast-feed. When he gets used to it the breast-feed is stopped. The same applies to the baby who spits out the cod-liver oil and defies all efforts to give it to him. He will often take it at the end of a breast-feed without difficulty. A baby's crying and fussing during a feed is apt to be considered mere naughtiness, when in fact it is due to thirst, a soiled napkin, fatigue, or teething. It may be due to his desire to feed himself, or to a desire to use a cup instead of a bottle. Attempts to force the child to feed when he does not want it will certainly increase the difficulty. Many mothers are worried by the normal falling off of the weekly weight gain after the first six months, and so of his appetite. If the mother tries to force him to take extra food he will certainly refuse it. The more anxious and fussy the mother, the greater the difficulties which arise. The calm, patient mother who does not force the baby to take food against his will rarely has serious difficulty in feeding her baby.

Conclusions

A very large proportion of feeding difficulties are man-made. They arise from failure to prevent difficulties, from ignorance of the normal variations, and from rigidity and inelasticity in infant feeding instead of adapting the method of feeding to the needs of the individual. Other difficulties arise from the smattering of knowledge possessed by many about nutrition. Ultimately most of the difficulties in infant feeding can be ascribed to the inadequate training of doctors and nurses in the practical details of infant feeding and to the concentration in their teaching on the rare and the obscure, and on complex laboratory investigation and procedure, instead of on the really common problems which they will meet every day in general practice.

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Within the next six or eight months the Northern Ireland Tuberculosis Authority hopes to have an additional 200 beds, including 116 for children. Dame Dehra Parker, Minister of Health and Local Government, stated recently that there were 1,381 cases of tuberculosis undergoing treatment in hospital, and that the number awaiting admission was 625. She added that there were now 248 more beds available than on September 1, 1947, when the Authority assumed all functions in connexion with tuberculosis services. The use of sleeping shelters at the homes of patients in suitable circumstances was being encouraged. At present 124 shelters were in use, and approval had been given to the provision of a further 50.

ANTIHISTAMINES IN THE TREATMENT OF NAUSEA AND VOMITING OF PREGNANCY

REPORT ON A CLINICAL INVESTIGATION

BY

T. DOUGRAY, M.B., Ch.B., M.R.C.O.G.

Obstetrician, St. Chad's Hospital, Birmingham; Obstetrician, County Borough of Smethwick

Nausea and vomiting of varying degree occur so often during pregnancy as to be accepted by the patient and her attendant as normal accompaniments of that condition. In some cases, however, in the absence of adequate treatment the vomiting becomes progressive, leading eventually to a complete intolerance of all foods and liquids.

Apart from those cases in which the sickness is associated with disorders of the urinary and gastro-intestinal systems, etc., little is known regarding the origin of the nausea and vomiting of pregnancy, although most clinicians seem to accept neurosis as an aetiological factor of considerable importance. Theories have been advanced which relate the condition to endocrine upsets and dietetic deficiencies; and the usual occurrence of the sickness during the period of placental development has led to speculation on the possible part played by the placenta in producing it. The most interesting hypotheses are those which consider that vomiting of pregnancy is an allergic reaction to albumin of ovo-placental origin, and that it is caused by toxic placental products, such as peptone, guanidine, and histamine, liberated into the blood stream by the activity of the trophoblast.

The conception that histamine might be an important aetiological factor was advanced by Hofbauer in 1926, and Kapeller-Adler (1941) has revived interest in this work. She has investigated the histidine-histamine metabolism in normal and pathological pregnancies. From her results she concludes that the toxæmias of late pregnancy are probably manifestations of histamine intoxication, and that the disorders of the early months, such as morning sickness, excessive salivation, dyspepsia, and headache, may indicate a smaller degree of such intoxication.

The encouraging results obtained from the application of antihistamine drugs to the albuminuria of acute nephritis led to an attempt to determine whether or not the onset of albuminuria as a manifestation of toxæmia could be averted by the use of these drugs in pregnancy. It was soon found that patients who complained of nausea and vomiting experienced relief from their symptoms during the administration of the antihistamine drugs. The response obtained, particularly in cases in which other measures had failed, was so striking that it was decided to carry out a fuller investigation of the therapeutic potentialities of the antihistamines in this condition.

Present Investigation

This clinical investigation was carried out during the period from January 1, 1948, to March 31, 1949, when a total number of 1,816 new patients attended the antenatal clinics of the Public Health Department of the County Borough of Smethwick. In the early part of the investigation observations were made on the effect of an antihistamine drug on patients whose nausea and/or vomiting did not respond to the therapeutic measures generally employed in obstetrics. These measures consisted in advice