*Symposium on Respiratory Infections in Children**

THE NATURAL HISTORY OF COMMON RESPIRATORY INFECTIONS IN CHILDREN AND SOME PRINCIPLES IN THEIR MANAGEMENT—I

JOHN FRY, M.D., F.R.C.S.

Beckenham

Infections of the respiratory tract account for around two-thirds of all work connected with children in British general practice.

In spite of this high frequency, we still know relatively little of the aetiology, pathology, natural history and course of these conditions. It is not surprising, therefore, that classification and nomenclature are confused and confusing, and that their management is based on many irrationalities and wrong premises that we would do well to correct as soon as possible.

Natural History

My own contribution to this discussion will deal with the natural history of these conditions as seen in one London suburban general practice, and to take these patterns of the natural history as a basis for discussing some important therapeutic principles and applications.

If we are to understand these endemic disorders and get a base line for any effective therapeutic measures then it is vital that we study the true natural history.

It is a pity that in the past there have been so few epidemiological studies in this respect, in view of the enormous opportunities that present themselves to the family doctor, the school medical officer and the paediatrician. As far as I can discover only two studies have been planned to examine these important aspects—namely, the " 1,000 Families Project " in Newcastle, a worthy tribute to the memory of the late Sir James Spence, and the important work being carried out by Professor John Dingle in Cleveland, Ohio—in both of these classic surveys the observations have, of necessity, been on children in their homes—the province of the family doctor. Surely it is here in general practice that some further studies are necessary.

I have in my own small way tried to study these children and it is only through the advent of the National Health Service that this

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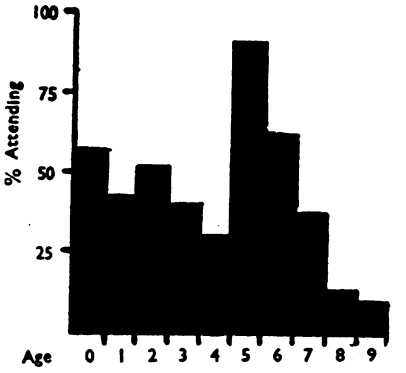
has been possible; for it is now possible to know with accuracy the numbers of the population at risk, to record on provided cards the diseases for which the doctor is consulted, and to follow up these children over long periods of time. In my practice I have kept records over the past ten years on the prevalence of the common respiratory infections.

The series of histograms have been prepared from these records and show the patterns of prevalence of the various common respiratory disorders in children in their first ten years of life.

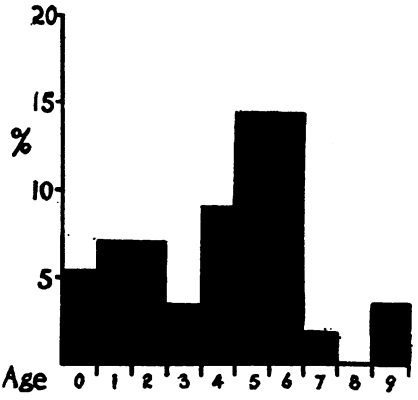
I have been deliberately vague in classification and terminology so as to avoid confusing you with a multiplicity of useless labels. Figure 1 is a picture of the prevalence of all respiratory infections. Figure 2 relates to " acute chest infections " —a group characterized by evidence of general infection plus definite abnormal signs in the chest. Acute otitis media (figure 3) and acute infections of the throat (figure 4) complete the picture.

In all the four histograms one can note a remarkably constant pattern:—



Age:	0	1	2	3	4	5	6	7	8	9
%attending ..	57	43	51	40	31	90	63	39	13	10

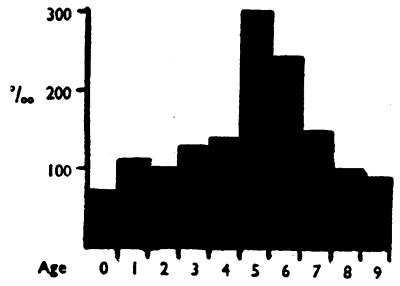
FIG. 1. Age incidence of children under 10 years attending for upper respiratory tract infections, 1947–55.



Age:	0	1	2	3	4	5	6	7	8	9
No. ..	3	4	4	2	5	8	8	1	—	2
% ..	5.5	7.2	7.2	3.6	9.1	14.5	14.5	1.8	—	3.6

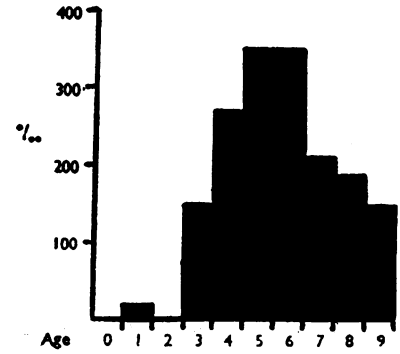
FIG. 2. Age incidence of children attending for " acute chest infections ", 1947—55.

(*a*) A moderately high level of prevalence at 0—3.
(*b*) A peak at 4—7, the pre-school and early-school period.
(*c*) A dramatic fall at 8—9.
(*d*) A low and falling level after 8.



Age:	0	1	2	3	4	5	6	7	8	9
No. ..	5	9	7	10	9	24	19	13	11	7
‰ ..	70	110	100	125	135	300	240	150	100	90

FIG. 3. Age incidence of acute otitis media in children (under 10) in a consecutive series of 114 cases.



Age:	0	1	2	3	4	5	6	7	8	9
No. ..		2		12	18	28	28	18	14	12
At risk..	76	85	70	80	67	80	81	84	76	81
‰ ..		23		150	268	350	350	215	184	150

Fig. 4. Age incidence (under 10 years) in a group of cases of acute tonsillitis.

Management

What do these patterns of natural history suggest in the applications of treatment?

The fact that there is this dramatic and sudden fall at around 7—8 years of age suggests that there is a natural tendency towards a spontaneous remission at this time. Do we therefore require that nearly 250,000 children have their tonsils and adenoids extracted every year in children between 3 and 9 at a cost of 40 young lives and £2—3 million? How many of these children going through their catarrhal phase would get better without this gross and drastic interference? This is almost certainly a normal state that has to be accepted and probably endured.

Similarly with antibiotics. With this tendency towards a natural and spontaneous remission what are the real indications for antibiotics? These are wonderful drugs in treating infections caused by sensitive organisms, but it certainly does not follow that all infections by these organisms require antibiotics. We must not forget the natural resistance of the body, the changes in the virulence of the organisms (note the case of scarlet fever and other strepto-

coccal infections) and the dangers of these drugs. In my own practice I have for the past five years deliberately tried to be as strict as possible in their use. I have tried, whenever possible, to avoid using them and have applied strict indications depending on the severity of the illness, both local and general, and on the patient as an individual. Under such a system I found that in acute chest infections antibiotics were required in only 50 per cent of cases, in acute otitis media they were used in 25 per cent and in acute tonsillitis in 20 per cent of cases. In spite of this low rate of usage all recovered completely and there were no major complications in those treated with specific antibiotics, or in those treated with non-specific measures. Certain indications were discovered, but there is no time to discuss these now. It does show, however, that we can be bold with safety, and restrict the use of antibiotics to a *minority* of cases.

Whenever we use these potent and potentially dangerous drugs we must always answer the questions WHEN, WHAT and HOW should they be used?

WHEN—As has already been enunciated the fact that there is an infection is not synonymous with indications for antibiotics. Definite indications must be defined. The general and local conditions of the patient and his disease assessed.

WHAT—Penicillin is still the most useful agent in treating bacterial infections in general practice. It is still the first choice in all but a few exceptions. The ever-increasing tide of the broad spectrum antibiotics is to be deplored, especially when supported by such a high pitch of advertising.

HOW—If penicillin is used, then I feel it should be given by the most efficient route. This, of course, is by intramuscular injection, even in children. These injections should, I believe, be given by the doctor himself. In this way lazy prescribing of oral preparations is avoided and its use restricted to necessary cases. " Courses " of antibiotics are not necessary, and the doctor must reassess his case daily and cease therapy at the appropriate time; one, two or three injections may be sufficient.

All these principles and methods are easily applicable in practice, and I can vouch for their success.

General Measures

If not by tonsillectomy or with antibiotics how are these young patients to be treated? My own policy is to regard these recurring catarrhal infections as part of the process of development, and my aim is to endeavour to tide both mother and child over this rather difficult and trying phase without resorting to any drastic remedies or unnecessary interference. Each case must, of course,

be treated as an individual problem and appropriate management applied to each child, each mother and each family.

This period with recurring coughs, colds, earaches, sore throats and attacks of chest infections, and accompanied by various problems of behaviour and poor health is undoubtedly a period of great anxiety to the mother, and if we are to manage the case with any success the first step is to establish good *rapport* between mother and doctor. It is essential to spend adequate time to explain the condition and natural course in simple and clear terms; to apply strong and repeated reassurance; and to anticipate the ridiculous and fantastic stories that well-meaning friends and neighbours belabour our young mothers with. In order that this *rapport* can be established the mothers must be encouraged to attend frequently to discuss their problems and for this purpose the institution of special childrens' clinics is a most valuable method. My own procedure is to see children from birth till around 7—8 years of age by organizing regular attendances for vaccinations and immunizations in the first year, and then to see children around their birthdays for general observation and discussion. Here it is necessary to say a few words on the place of the welfare clinics run by the local authorities. I feel that under the present National Health Service there should be no need for these anachronisms. They were originally introduced because parents could not afford doctors' bills, and, whilst they may still be necessary in less developed countries, they should not be necessary in Great Britain. As I have said proper management of the catarrhal child depends to a great extent on good *rapport* between mother and doctor, and it takes time for this to develop and the two to get to know each other and to appreciate each others views, and the mother to believe in and have confidence in her own family doctor. How can this vital and essential relationship become established at a " clinic " where the contacts are highly impersonal, and where the medical personnel do not attend the family during times of illness?

It is upon the family doctor in the National Health Service that the future proper and sensible care of our children must depend and we must see that our family doctors—present and future—are properly trained and informed on the rational management of these common and vital problems of childhood.