

tried one once and I would never do it again. It destroyed my sense of taste for about half a day.

Of those who did not attend the whole six-week course we had another eight give up smoking. As to the measurement, we found that 53 of the 187 men had peak flow readings below 500 and ten women had readings below 350. Women were mainly smoking between 10 and 20 cigarettes a day, the men between 20 and 30. The heaviest smoker—60 a day—was a woman. Fifty-five men and 44 women were reassessed. There was improvement in most cases. Actually, there was improvement in 83, but 12 of the others had high readings to start with. Thirty men stopped smoking and 17 of these had readings of 500 or more; 22 reduced and 12 had readings above 500. Twenty-five women stopped, and of these 20 had readings of 350 or more; 18 reduced, and 14 of these had readings of 350 or more. So we were able to improve 83 out of 187 people and to stop 63 of them from smoking.

The total cost of the 36-week period came to about £300. The cost for improvement can therefore be reckoned at about £3 12s. We find that it is the social pressures rather than nervous weakness that are the difficulties. It is much easier when the husband and wife come to the clinic together, or boy friend and girl friend. I do not regard it as a tremendous success, but, as Dr Levitt says, it is more successful than most anti-smoking clinics. I think it is a reasonable pattern and I have no doubt that other people can make an improvement and follow us with greater success.

## THE PERSONAL DOCTOR'S ROLE IN PREVENTION

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At the present time, throughout the world there is considerable uncertainty about the role which the general practitioner ought to play in medicine. The difficulties and anxieties which are evident in the National Health Service in this country are a very real manifestation of at least some aspects of this. Medicine, carried along with other branches of scientific knowledge, is advancing at such speed that the humble general practitioner clutching desperately at his stethoscope and flourishing it bravely as evidence of his personal recognition of scientific advance—albeit made by Laënnec some time

ago—is demonstrating clear evidence of his fear that events may be passing him by.

If he attempts to read his journals he is baffled by a bewildering array of ever more obscure articles on ever more limited and esoteric fields of scientific endeavour. The language of medicine is becoming increasingly difficult in its terminology—one has only to attempt to read any of the proliferation of articles on chromosome abnormalities to have a salutary example of this. It becomes ever more difficult for him to decide which trend is significant and a real advance in our knowledge and to separate it from the paper which is merely the ploy of an industrious senior registrar anxiously filling the required quota of publications to attain consultant status. One of the most important advances however, and one which the general practitioner can understand because of its direct relevance to his own work is the recognition of the newer applications of the techniques of epidemiology. For the future will surely recognize as one of the great pathways of knowledge the present-day concept of treating on an epidemiological basis not only infectious diseases like diphtheria or smallpox but also those plagues of our modern society, such as coronary heart disease, lung cancer and chronic bronchitis.

I would like to quote from ‘Tomorrow’s Doctors’ the stimulating and thought-provoking Sir Charles Hastings’ lecture delivered by Dr J. R. Ellis last year (Ellis 1965):

It is sad that in countries such as Britain, where the level of education and the ability to enforce legislation should make preventive medicine easy, there is insufficient knowledge to develop it fully. Having succeeded in controlling most infectious diseases about which medicine knows so much, we are forced back to the level of early diagnosis as our best defence against those diseases about which medicine knows too little.

Therein lies the problem and the challenge; to diagnose early a condition which by the most recent and perhaps generally accepted definition, that of the Medical Research Council Committee (Medical Research Council 1965), on the aetiology of chronic bronchitis, should be at least two years old before it is recognized. Most of us, I feel, would not easily recognize as a chronic bronchitic a patient whose symptoms had only been present for the bare minimum of two years. The difficulty is even greater when, as in general practice, one is dealing with individuals and not groups of patients. The task is perhaps easier for the epidemiologist by virtue of the technical resources open to him. From his lofty vantage point on the roof of the London School of Hygiene and Tropical Medicine in Keppel Street, or with respect to Dr Holland, from that imposing new skyscraper of St Thomas’s on the South Bank, he can command a superb view of this bronchitic island of ours. Peering with eagle

eye through the patches of industrial haze he can pick out with enviable ease those groups living in their air-polluted districts who are more likely to contract this ill-defined condition. He is able to distinguish the coughs, the excessive sputum and breathlessness of the industrial workers nicely segregated in their social class, and place them in one of his neat shaded statistical rectangular areas. It is only fair to indicate that there is no reason why the general practitioner should not emulate the technique of the epidemiologist. We have only to consider the magnificent work of my colleague, Dr I. Gregg (Gregg 1964), with his Wright peak expiratory flow meter gently but firmly rammed down the mouths of his entire practice. How well he has demonstrated to us those groups of cigarette smokers in his practice whose respiratory function as measured by their peak expiratory flow falls neatly below the sloping line which denotes the lower limit of normal. But I feel sure that he would be the first to agree with me how difficult it is to translate these epidemiological findings into terms that are relevant to the single patient, the man who is sitting opposite one's desk in one's surgery. For when his disease has developed to the stage when it can be diagnosed as chronic bronchitis there seems to be so little that can be done for him.

To prescribe cough medicine which is what he asks from you is of little avail. To tell him to stop smoking, which is what he most certainly does not ask from you is of even less avail. It is difficult enough for him now, to while away the tedium of the long winter nights of television without the excitement and stimulation of cigarette advertisements—to have to sit and suffer the remaining programmes without smoking seems to be asking too much. We prescribe bronchodilators, but these only slightly reduce the airways obstruction of his disease. Sympathomimetic drugs and theophylline derivatives are of help, but this is limited.

There seems to be good evidence—and for this we owe much to the work of Dr May—that the pus in mucopurulent sputum generally results from infection with *H. influenzae* and *Streptococcus pneumoniae*. It is a boon therefore both for the general practitioner and the patient that something can be prescribed which has some recognizable effect. To reduce the duration even if one has no effect on the frequency of infective episodes by the use of tetracycline or ampicillin is surely of some value. But too often one replaces the loose, easily expectorated mucopurulent sputum by a viscid tenacious stringy phlegm which is chokingly unpleasant in its characteristics. And even if it were possible for him to recognize a chronic bronchitic early, for a general practitioner in a northern or midland industrial urban area to advise his working-class patient to change his dusty occupation and to move to more pleasant work

in the fresh air of a delightful country area is not likely to be productive of anything more useful than his own exposure to some of his patient's hypersecretion of mucus.

Is not one of the difficulties of this disease the patient's own lack of recognition and acceptance of the seriousness of the condition until it is too late? He does not even recognize his early morning cough and sputum or 'throat clearing', as Dr Gregg calls it, as a symptom, even though it has been present on most days during at least three consecutive months for more than two consecutive years. To many of our fellow countrymen, bronchitis is not regarded as an illness—a nuisance perhaps, but something about which nothing can or, indeed, needs to be done. Many patients with simple chronic bronchitis do not visit their general practitioners, because the condition is so insidious in its progress that they have marked evidence of airways obstruction before they accept that all is not well with them. Even if they did come early, it is sad reflection that our training as general practitioners fits us much more to the early diagnosis of a rare, but striking disease, such as acromegaly, than bronchitis. It may be therefore that another type of filter, even earlier than the general practitioner, would be more successful. There was recently reported (Donaldson and Howell 1965), an experimental "multiple screening clinic" in Rotherham, Yorkshire, which offered simple tests for assessing diabetes, defective hearing, cancer of the cervix, and chest disease, open to the whole population. The response was overwhelming, many more attending than was anticipated. Perhaps a simple test of respiratory function, such as the peak expiratory flow, would help to identify the bronchitic that the chest x-ray would not reveal. This type of diagnostic clinic is surely a useful extension of the techniques of epidemiology?

What then is the role of the general practitioner in the prevention of chronic bronchitis? Notice I said general practitioner, and not personal doctor. It seems to me that there is difficulty enough in defining chronic bronchitis, without entering into a discussion of what is meant by personal doctor. Sometimes I have a nightmare—in no small measure induced, I am afraid, by the pioneering and brilliant work of Dr Charles Fletcher (Fletcher 1965) and his colleagues of this hospital. I have a vision of a tiny general practitioner standing powerless like Canute before an ever-advancing sea of mucopurulent sputum, and vainly telling it to "go back"!

Our role as general practitioners is first to take part as individuals and doctors in those public health measures which the work of the epidemiologist has demonstrated as so important. We must take part by active propaganda in support of clean air measures in our urban areas. Those of us who are factory doctors—and many

general practitioners do this work—must do all in their power to remove air pollution in the factories. As personal and family doctors, we have first contact with those people who are especially at risk. It has been made abundantly clear to us today who they are. Above all, the heavy cigarette smoker must be shown the error of his ways. Dr Gregg and Dr Gomez have demonstrated the value of the Wright peak expiratory flow meter as a tool in this work. It has been said before, and I think is worth repeating—there should be one of these instruments on each of our desks, next to our sphygmomanometer. Instead of our middle-aged patient asking us to take his blood pressure because he has a “headache and feels giddy”, it would be of much more value for him to ask us to measure his peak expiratory flow, because he is not able to climb the stairs as easily as before. The demonstration to a heavy cigarette smoker of the visible effect of his respiratory function might at least go some way to discourage his habit.

Our knowledge of the role of viruses in the aetiology of chronic bronchitis is very scanty. As the bewildering complex of respiratory viruses becomes unravelled, so they may be found to play their part in that mysterious sequence of events which initiates the hypersecretion of mucus. While there are, as yet, no specific antiviral drugs, it is in the prevention of viral diseases that immunology has made some of its most significant advances. To enter the realms of speculation, how delightful it would be for general practitioners to be able to give, along with his polio, whooping cough, diphtheria, and soon measles—yet another—an antibronchitis virus vaccine.

The place of recurrent childhood bronchitis in the development of chronic bronchitis in adult life is not clear. There is some evidence to suggest that there is a relationship. The energetic treatment of respiratory episodes in young people with full courses of antibiotics and its effect on the later incidence of chronic bronchitis might well be a most profitable line of inquiry. That we should so treat all respiratory infections with great seriousness in those people we know to be at risk, surely goes without saying.

Using perhaps a different approach, I have been particularly interested in the role of the upper respiratory tract in chronic bronchitis. One of those concepts to which we pay lip service rather than practical application is that of the continuity of the upper and lower respiratory tracts. Too often we consider the nose and upper airways to be an entirely separate part of the body to be relegated to dark side-rooms somewhere, wherein sits a gentleman, peering mysteriously through the hole in a rather impressive, round mirror on his forehead. The respiratory mucosa of the nose is a pseudo-stratified columnar ciliated epithelium with mucous glands and goblet cells, so is the respiratory

mucosa of the bronchial tree. Lynne, Reid (1960) and Heard (1965) have shown that the hypertrophy of the mucous secreting element is present throughout the bronchial tree. Why stop at the trachea? Might it also be present in the nasal respiratory mucosa? Negus (1961) has written much about the protective function of the nose to the lower respiratory tract. Although there is very little experimental, or indeed any other evidence to support it, it may not be too outrageous a hypothesis to suggest that chronic bronchitis is a failure of the defence mechanism of the upper respiratory tract. It is well known that in patients with a laryngectomy and those who have had a tracheostomy for any length of time, i.e., when the nasal respiratory epithelium is no longer subserving its normal function, there is an excessive mucoid secretion, and these patients are prone to recurrent respiratory infection and chronic bronchitis. It is an interesting observation that certain elderly chronic bronchitics are subject to a distressing rhinorrhea, especially in the mornings. Although the nasal respiratory mucosa is tantalizingly accessible in its position, its extreme vascularity makes excision biopsy most difficult and dangerous. We have been trying other simpler methods with results which are too early to elaborate. It would surely be of value if there was some change in the bronchial mucosa that was mirrored in the nasal respiratory mucosa and was able easily to be recognized.

If what I have said has been speculative and, I am afraid, pessimistic, that is only a measure of how much we have yet to learn about this disease. There is little new that I have added to what has already been said; but that seems to me to be the role of the general practitioner. It is for him to make use of the knowledge that is gained for us by others, the research workers, many of whom we have heard talk in so stimulating a fashion today. It is for him to recognize those lamps of knowledge that are gradually beginning to shine through the thick 'green' fog of ignorance that envelops chronic bronchitis, and to apply the light from them, pale and dim though it as yet may be, in an attempt to prevent this all too common and yet so terrible disease.

### Summary

The role of the general practitioner in the prevention of chronic bronchitis lies mainly in the application of the newer knowledge about it that has been gained from the work of epidemiologists and other research workers. In view of the lack of effective treatment, early diagnosis is the best form of defence against it. Some of the groups who are most at risk have been indicated by these workers, and an important part of the role of the general practitioner in its

prevention is to identify the members of these groups. There is a great need for a simple technique of early diagnosis.

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#### DISCUSSION

**Dr Kearns:** I am an industrial medical officer, and the discussions today have suggested to me that most of the things we are going to do to bronchitics are going to result primarily in a reduction of their absence from work. I am employed to achieve this object, among others. Many of the measures we have heard discussed—the various treatments and physiotherapy and the stopping of smoking—all seem to have this economic effect, and it does not seem definite that you in fact stop the deterioration of the man himself. Since we are not sure that infection makes him any worse, we are not sure how long these drugs will improve his situation.

May I ask if it is any value at all, and if it is a practical proposition, to vaccinate bronchitics as a group against such things as influenza or the common cold? Is there any indication that it is desirable to do this?

**Dr C. M. Fletcher:** The question of vaccination is difficult. The only formal trial of vaccination among bronchitics was one carried out in a large number of chest clinics some five or six years ago by the Medical Research Council. While vaccination did reduce the attacks of influenza in the bronchitics, it had no effect on the total number of spells of illness or on mortality. It seemed that bronchitics made up for what they lost in influenza by having other illnesses. On first principles, vaccination is reasonable, but there is not any really good supporting evidence. The Ministry of Health do put bronchitics in the group of special risk patients for whom vaccination may be desirable. But it seems that the inconvenience of it may not be worth the marginal benefit.

**Chairman:** In a practice with which I was associated, over two