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LETTERS TO THE EDITOR

Relation of urinary cotinine concentrations to cigarette smoking and to exposure to other people's smoke

Dr Simon Thompson and his colleagues measured urinary cotinine in 184 self reported non-smokers (May 1990;45:356–61). Taking 10–30% of average smokers' concentrations to indicate occasional smoking and over 30% to indicate regular smoking, they found two (1·1%) occasional smokers and no regular smokers among their non-smokers. In an earlier study,[1] based on 808 self reported non-smokers, I found 1·1% occasional smokers and 1·4% regular smokers and, on the basis of these data and evidence from other sources on the extent to which self reported never smokers were ex-smokers, I calculated that bias caused by misclassification of smoking habits could completely explain reported excesses in lung cancer risk in non-smokers married to smokers. Thompson and colleagues argue that the lack, in their study, of typical smokers misreporting themselves as non-smokers "strongly suggests" that my hypothesis is "untenable."

Their conclusion is unreasonable for several reasons. Firstly, their study is much smaller than mine. Secondly, unlike mine it was not nationally representative, being based on men and women attending BUPA. Thirdly, the number of regular smokers observed (zero) is not different from that expected (2·6) were the underlying misclassification rate in fact 1·4%. Fourthly, they ignore evidence from several other relevant studies. Elsewhere, in a detailed review of possible health effects of environmental tobacco smoke,[2] I cite data from 10 studies (including Dr Thompson's and my own) of more than 100 subjects, all carried out in a context in which subjects were not actively persuaded to give up smoking (which increases misclassification rates[3]). Among a total of 12 948 subjects 245, or 1·9%, were found to have cotinine concentrations consistent with regular smoking. The 10 studies gave rates ranging up to 2·7%, with a median of 1·4%, only the Thompson study and the earlier study of Wald and Ritchie[4] reporting a rate of zero.

Although it is the existence of true smokers among the self reported non-smokers that causes bias in estimates of the effect of a smoking spouse on lung cancer risk, defining rate with self reported non-smokers as the denominator may be somewhat misleading. For a given proportion of smokers claiming to be non-smokers, calculated in this way the misclassification rate depends to a substantial extent on the proportion of smokers in the population (low in those attending BUPA), and it may be better to use true smokers as the denominator when estimating misclassification for a study. On the basis of results from those eight of the 10 studies used earlier that provide relevant data, I found that 3·2% of smokers claimed to be a non-smoker while having cotinine concentrations consistent with regular smoking. Clearly Dr Thompson's data, being based on only 49 self reported smokers, are not inconsistent with this overall finding.

Estimating the true extent of bias due to misclassification of smokers as non-smokers is a complex issue, made more difficult by a lack of information on rates in Oriental populations and on the extent to which current smokers misclassify themselves as lifelong never smokers (rather than as non-smokers).

An up to date review of the evidence[2] underlines its importance, however, and apparently—but not actually—discrepant results from one small study can scarcely change this.

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1 Lee PN. Lung cancer and passive smoking: association an artefact due to misclassification of smoking habits? *Toxicol Lett* 1987;35: 517–24.
2 Lee PN. A detailed review of epidemiological evidence relating environmental tobacco smoke (ETS) to the risk of cancer, heart disease and other causes of death in adults who have never smoked. Basel: Karger (in press).
3 Lee PN. *Misclassification of smoking habits and passive smoking. A review of the evidence.* Heidelberg: Springer, 1988.
4 Wald NJ, Ritchie C. Validation of studies of lung cancer in non-smokers married to smokers. *Lancet* 1984;i:1067.

Life threatening haemoptysis in cystic fibrosis: an alternative therapeutic approach

We think that a number of important aspects of the report by Dr Bilton and colleagues (December 1990;45:975–6) merit further comment. The first is that this is not the first report of the use of pressor agents in managing patients with haemoptysis as they claimed.[1]

Secondly, omitting to correct the gross thrombocytopenia ($8·2 \times 10^9$/l) must have contributed to the severity of the recurrent haemoptysis and is in itself not compatible with simple hypersplenism. Although the administration of vitamin K will correct clotting factor deficiencies linked to vitamin K malabsorption, it takes 24–48 hours to be effective; it is not appropriate treatment for correcting coagulation defects in actively bleeding patients, where fresh frozen plasma is the treatment of choice. We presume that the stated prothrombin time of 1·4 seconds was a typographical error.

Thirdly, the failure to instigate specific measures to protect the airway and prevent asphyxiation during the episodes of rebleeding was somewhat disconcerting and, although it was stated that there was no difficulty in distinguishing between a large haemoptysis and a haematemesis in this patient, more precise quantification of his cardiovascular and respiratory state (for example, arterial oxygen tension, blood pressure, heart rate, and respiratory rate and the appearance of the chest radiograph) would have been helpful, especially in view of his previous variceal bleeds and the recent sclerotherapy.

Finally, discussion of the more important and potentially fatal consequences of intravenous administration of desmopressin and vasopressin apart from water retention and bronchoconstriction (see *Martindale*[2] and references therein) should have been included as this report may prompt more widespread recourse to the use of these agents in other, perhaps older, patients presenting with severe haemoptysis from other causes.

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1 Magel G, Williams MH Jr. Treatment of massive haemoptysis with intravenous pitressin. *Lung* 1982;160:165–9.
2 Anonymous. *Martindale. The extra pharmacopoeia.* 29th ed. London: Pharmaceutical Press, 1989:1138.

AUTHORS' REPLY

We commend Drs Chilvers and colleagues for finding a report that had eluded ourselves, the pharmaceutical company and recent editorials on the subject. Our report was clearly timely in reawakening interest in a therapy that had been forgotten and may be useful in carefully selected patients.

We have used vasopressin since our report was published to control profuse haemoptysis in a further patient with cystic fibrosis. Side effects were those of fluid retention that required diuretics as previously mentioned. Our case report was specific to cystic fibrosis and discussion of other serious side effects (detailed in the *British National Formulary*) did not seem relevant as they are well known from the use of vasopressin for oesophageal variceal bleeding in older patients.

With regard to protection of the airway, the patient was sucked out. It is difficult for a patient to retain a mouthpiece while coughing blood and the insertion of an endotracheal tube was contraindicated in this patient as it would have required sedation and assisted ventilation. Intravenous pressor agents resolved this problem.

The platelet count was a typographical error: it should have read 82×10^9/l; and the prothrombin measurement was a ratio [1.4].

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BOOK NOTICES

Electron Microscopy of the Lung. Vol 48. Dean E Schraufnagel. (Pp 612; $210.) New York: Dekker, 1990. ISBN 0-8247-8319-0.

This is an excellent reference book, of interest to the research scientist and clinician alike. It is illustrated with 290 micrographs of normal and abnormal lung. Divided in two parts, the first part focuses on most of the electron microscopic methods currently available and the results of their application to study normal airway cilia, surface epithelium, lung interstitium, vasculature, permeability, and variations in human or experimentally induced lung disease, including pneumoconiosis. The second section summarises the applications of the electron microscope as a clinical tool in the diagnosis of neoplastic and

non-neoplastic disease, including pathogenesis of asbestos related disease in man. Each chapter usefully begins by introducing in some detail the required methods and continues with a review of results, all with excellent illustration. There is information on the ultrastructure of respiratory tract cilia and their motility and pharmacological regulation and mucociliary interaction. The chapter describing the principles and application of morphometric methods to interpretation of lung slices and study of the interspecies variation of airway surface epithelia is excellent, as is the comprehensive chapter on pulmonary vasculature in health and the evolution of alterations with chronic pulmonary hypertension and the adult respiratory distress syndrome. One chapter reviews the ultrastructural features of common and rare tumours superbly. There is also an elegant description of the constituents of lung interstitium with interesting discussion of the functional implications of the three dimensional organisation of connective tissue elements and their variation in emphysema and fibrosis. The three dimensional structure of the lung is beautifully shown by corrosion casting techniques and variations are shown following experimental injury and angiogenesis. There is an interesting review of the history and biological properties of fluorocarbon emulsions used to investigate the interaction of plasma proteins and endothelial glycocalyx, and two chapters deal with the pathogenetic mechanisms in animal models of asbestosis and silicosis and techniques and data generated in the use of analytical scanning, transmission, and scanning transmission electron microscopy to identify fibre types and investigate asbestos induced disease in man. The book is therefore suited to a wide readership and forms an excellent text for learning more about the special applications of the electron microscope to the study of lung disease.—PKJ

Respiratory Illness in Children. 3rd ed. P D Phelan, L I Landau, A Olinsky. (Pp 403; £59.50.) London: Blackwell, 1990. ISBN 0-632-02567-0.

The remarkable success of the first edition of this book in presenting a comprehensive account of illnesses affecting the respiratory tract in children lay not only in the need for such a book (at a time when subspecialisation in respiratory medicine in childhood had scarcely begun) but even more in the extensive clinical and research experience of its authors. Fifteen years later the aim of the present authors in introducing the third edition remains unchanged despite the explosion of additional information on nearly all of the topics considered. This book will appeal to clinicians in terms of its scope, balance, and presentation. About half of the text is devoted to acute respiratory infections, asthma, cystic fibrosis, and an analysis of common symptoms of respiratory disease. Each chapter on these topics is essential reading for paediatricians in training, whether or not they intend to specialise in respiratory medicine. Childhood asthma and cystic fibrosis are dealt with expertly and comprehensively in "state of the art" accounts that include recent advances in understanding airways inflammation in asthma and the molecular genetics of cystic fibrosis. The introductory and final chapters, which deal with lung growth and development and the physiology of respiration, are similarly clear, concise, and informative. Four of the remaining eight chapters—on neonatal respiratory disorders, pulmonary complications of inhalation, lung defences and infection, and congenital malformations of the respiratory tract—deserve special mention for the lucid descriptions of the clinical approaches to diagnosis and the emphasis on the principles of management. Throughout the text the illustrations are excellent and the quality and educational value of the chest radiographs selected are outstanding. It is disappointing but, to some extent, inevitable that several chapters have not been fully updated since the previous edition. In some only a minority of references refer to publications within the past 10 years, whereas in others nearly half of the references quoted have appeared in the past five years. This detracts from the book's value as a source of reference. The inclusion of a chapter outlining trends in radiological assessment of the respiratory tract and one on respiratory failure in children might have improved this book without substantially enlarging it. It would have required a larger and multiauthor textbook to fulfil the original aim of this book and, to achieve this, balance and presentation may have had to be compromised. This is an excellent reference book for MRCP candidates and invaluable for paediatricians in training, particularly those with interests in respiratory medicine. It will also be used by paediatric chest physicians but falls short of being a comprehensive reference textbook on paediatric respiratory medicine.—HS

Introduction to Respiratory Care. M G Levitzky, J M Cairo, S M Hall. (Pp589; £32.) Philadelphia: Harcourt Brace Jovanovich, 1990. ISBN 0-7216-1090-0.

This book has been written as a core textbook for respiratory therapists in the United States. As we do not have respiratory therapists (physiotherapists specially trained in the care of patients with respiratory failure) in the United Kingdom, the book is not strictly relevant to any health care professional group in Britain. But the whole direction of the book is towards the care of patients in the intensive care unit and the information would be useful for intensive care nurses and technicians who wish to know more about the physiology and treatment of cardiorespiratory failure. The book has been written by a professor of physiology, a respiratory therapist, and an anaesthetist, and as a consequence it lacks much of the detail that many respiratory physicians would consider essential. I was disappointed by the very short section on the pathophysiology of respiratory disease, which occupied only 20 of the 580 pages. There is no information on the care of respiratory failure in the community, and no mention of domiciliary ventilation or the new types of ventilation used to assist patients with obstructive lung disease, such as continuous positive airway pressure and nasal intermittent pressure ventilation. The book is divided into three main sections. The first section deals with the basic physics and chemistry and physiology of the cardiopulmonary system with perhaps too much basic physics and chemistry. I would have preferred less information on chemical bonding and the molecular configuration of proteins in return for more clinical material. The second section, dedicated to patient assessment, is extremely good and covers history, examination, pulmonary function, exercise testing, blood gas analysis, and radiology. These sections are practical and give detailed information on how to take arterial blood gas samples, administer exercise tests, take samples for microbiology, etc—the sort of information that is often lacking in textbooks for physicians, where, for some reason, this knowledge of practical techniques is assumed. The last part, on therapeutics, is also extremely good, covering the pharmacology of cardiorespiratory drugs and with sections on oxygen therapy (but no information on domiciliary oxygen therapy) and on bronchopulmonary hygiene and a very useful simple explanation of mechanical ventilation. I hope that one day we will have respiratory therapists in this country, though I would like to see them broadening in this function from intensive care nurse technician to someone interested in the whole gamut of respiratory disease and respiratory failure. This book has no real audience in this country, but it is clearly presented and practical and would therefore be a useful adjunct to the other textbooks found in intensive care units.—AP

Essentials of Respiratory Disease. 3rd ed. R B Cole, A D Mackay. (Pp 266; £14.95.) Singapore: Churchill Livingstone. ISBN 0-443-03646-2.

This book was first published in 1971. The second edition came out in 1975 but it has taken a further 15 years to see the third edition. Over this period its place in the market has been lost to the profusion of short textbooks on respiratory medicine that we have seen over the last few years. Although these books are supposedly aimed at medical students. I think that most students tend to stick to the established general medical textbooks and we are therefore left with junior hospital doctors studying for exams or wishing to widen their experience of the specialty. *Essentials of Respiratory Disease* is certainly well written, very adequately illustrated, and easily read. The style is, however, rather "traditional" and in places a little unimaginative. The first section deals with the history taking, clinical examination, and investigation of patients with chest diseases. Next comes the structure and function of the respiratory tract, which is very clearly explained and one of the strongest parts of the book. The third section, making up the bulk of the book, examines various diseases and conditions in turn. My overall impressions are that the authors have fallen midway between being basic enough for medical students and not carrying enough detail for junior doctors. Although many areas have been updated, such as laser treatment in lung cancer, AIDS, and the pathogenesis of asthma, there are several gaps. For instance, in the section on cystic fibrosis there is nothing about the identification of the gene with all its implications, and no mention of heart lung transplantation. I would have liked to have seen nasal IPPV at least mentioned in the chapters on respiratory failure and chest wall deformities. Transbronchial biopsy has now been replaced by bronchoalveolar lavage in the diagnosis of pneumocystis pneumonia in AIDS and nebulised pentamidine often given subsequently as prophylaxis. These are just a few examples of where I believe this book lags behind current practice. My feeling is that this edition has not been updated as well as it could have been. In consequence I think that