sequestration (not true "margination") in the pulmonary microvasculature. We would, however, suggest that such a rapid retention and subsequent release is much more likely to be due to changes in cell deformability, which is now generally believed to be the initiating factor in leucocyte sequestration before an increase in adherence. The importance of cell deformability as a determinant of neutrophil sequestration within human lungs has been demonstrated.[1] We[2] and others[3] have shown that the effect of this tripeptide in vitro is to increase neutrophil rigidity within seconds by assembly of F-actin. Such a change is much more rapid than any up regulation of either leucocyte or endothelial adhesion ligands, which require minutes to hours.

It is attractive to speculate that the inhalation of FMLP, either by a direct effect across the alveolar capillary cellular barrier or by indirect action via mediators released from macrophages or mesenchymal cells, impairs the deformability and hence transit of neutrophils through the pulmonary vascular bed.

COLIN SELBY
ELLEN DROST
BILL MACNEE
Respiratory Medicine Unit, Department of Medicine (RIE), University of Edinburgh, City Hospital, Edinburgh EH10 5SB

1 Selby C, Drost E, Wraith P, MacNee W. In vivo neutrophil sequestration within lungs of humans is determined by in vitro "filterability." *J Appl Physiol* 1991;71: 1996–2003.
2 Drost EM, Selby C, Lannan S, Lower GDO, MacNee W. Changes in neutrophil deformability following in vitro smoke exposure: mechanism and protection. *Am J Respir Cell Mol Biol* 1992;6:287–95.
3 Wallace PJ, Wersto RP, Packman CH, Lichtman MA. Chemotactic peptide-induced changes in neutrophil actin conformation. *J Cell Biol* 1984;99:1060–5.

AUTHOR'S REPLY Consideration of potential mechanisms for the neutropenia induced by *N*-formyl-methionyl-leucyl-phenylalanine inhalation is necessarily complex but reduced neutrophil deformability, for the reasons stated, may be important. The rapid onset of neutropenia suggests that it is a result of slowed passage through the pulmonary or systemic microcirculation or both—effectively margination. Margination could be produced either by reduced deformability or increased neutrophil-endothelial adhesion but more probably both mechanisms operate, whether simultaneously or sequentially. The occurrence of cutaneous flushing, which presumably is a result of the release of vasodilator mediators, in synchrony with neutropenia, indicates that the neutrophil has the capacity to respond in ways other than merely reducing its deformability within the time span of maximal neutropenia. Furthermore, we do not know the true time course of the phase of increased margination. Within 10–15 minutes of FMLP inhalation there is a "rebound" neutrophilia, indicating that there must be release of white cells from a reserve pool or pools, possibly bone marrow. The duration of enhanced margination may be much longer than the observed period of neutropenia, with continuing margination and neutropenia obscured by these newly circulating cells. If that is so, one might argue that enhanced adhesiveness, because it may be longer lasting, is relatively more important.

Because present evidence does not allow a definitive conclusion about the relative importance of the above mechanisms in the production of neutropenia, we did not ascribe a particular weight to each possibility. Using radiolabelled cells, we were unable to show leucocyte influx into the lungs during neutropenia. This may well be an imperfect technique. Nevertheless, in the absence of other published evidence, we cannot safely assume that margination, after neutrophil activation by an inhaled rather than an intravenous agent, takes place predominantly in the pulmonary circulation.

MATTHEW J PETERS
Department of Thoracic Medicine, Royal Brompton National Heart and Lung Institute, London SW3 6LY

BOOK NOTICES

Mediators of Pulmonary Inflammation. Edited by M A Bray and W H Anderson. (Pp 688; $165 USA and Canada, $189·75 elsewhere.) New York: Dekker, 1991. ISBN 0-8247-8442-1.

Ten years ago workers investigating the science of their own particular respiratory disease rarely found common ground with people in other areas. For example, researchers in emphysema were concerned with matrix turnover whereas researchers on asthma focused on airway smooth muscle. They felt as if they were worlds apart. Now it seems that we can find more in common. This is not because of the altruistic desire of researchers in one area to listen to and help workers in other areas—rather the evolution of knowledge has revealed that a chronic inflammatory process, based on a persistent influx of inflammatory and immune cells, drives these disease processes. Thus, although they have different pathological outcomes, there are at least some common pathways and in some cases it is the different site of inflammation (that is, airways or lung parenchyma) that may be critical. In research terms, this has been a very useful development because information gained by research directed at one respiratory disorder is proving relevant to another. From the title of this book by Bray and Anderson it seemed that we may have had a treatise exploring this area of commonality between respiratory diseases, focusing on the mediators implicated in the different disorders. This is not the case. Instead the authors focused on inflammatory mediators in the airways, particularly in the setting of asthma. This was a shame because the first chapter, by Reid, gives us an excellent perspective on the different lung diseases, whetting our appetite regarding the overlap, which, it seemed, might be further explored. The authors explain in the preface that they are unrepentant about their focus on asthma, choosing to elaborate on new findings in a disease where, as they say, "much of the excitement is concentrated." I feel obliged to tell you that this reader did not get overexcited, though there were some excellent chapters and the book is a useful compendium on mediators being explored in asthma research, at least up to 1990. The book competes strongly with other recent publications giving updates on developments in asthma research. There were the usual problems in a book of this type, covering a rapidly evolving area. There were few references after 1990 and in some chapters no references past 1988. This problem is highlighted for the interleukins (ILs), a family of mediators released by lymphocytes that often have proinflammatory effects. In one table the properties of IL-1–IL-6, believed to be most important at the time of writing, are listed. We are now up to IL-13 and many of the more recently discovered interleukins have been implicated in respiratory disease and asthma. Finally, one opportunity lost by these and other authors in this area was a lack of attempt to rationalise the terminology, which is so confusing to all but those intimately concerned. Thus the terms lymphokine, cytokine, growth factor, autacoid, paracrine agent, monokine, and mediator were used interchangeably, confusing those unfamiliar with the area, who are already punch drunk coping with the countless number of acronyms used to describe inflammatory mediators. In summary, this is a useful book for those requiring an introduction to inflammatory diseases of the lung and a detailed account of some areas of asthma research. It is not, as the title suggests, for readers trying to get an overview of the role of inflammatory cells and mediators in the wide spectrum of inflammatory lung diseases. To this end the authors may have better located their audience, and disappointed fewer readers, if they had chosen a more appropriate title reflecting the asthma focus of the book.— GEOFFREY J LAURENT

British Medical Bulletin: A Series of Expert Reviews—Asthma. Edited by P J Barnes. (Pp 225; £33.) Edinburgh: Churchill Livingstone, 1992. ISBN 0007-1420, 0 443 047189.

This is one of a series of "expert reviews" of various medical topics, produced quarterly by the British Council. This particular edition reviews recent advances in asthma in 19 chapters. Each is concise, well referenced, and preceded by an abstract summarising the content. The subjects covered are predominantly those of pathophysiology and include the currently popular areas of cell biology and immunology. In addition, topics not included in standard texts are reviewed—for example, the tracheobronchial vasculature, plasma exudation, and oedema in asthma. This book makes no attempt to provide a complete text on asthma but examines specific aspects in which recent advances have been made; it appears to be aimed at the physician with some background understanding of the condition. The first nine pages, however, are devoted to a clinical definition of asthma, which I suspect is unnecessary for most potential readers. The book suffers from a few problems. Cross referencing between the chapters of different authors, although attempted, is poor overall. Very recent developments have not been included in the text, which reflects the major difficulty of producing really up to date reviews in the form of an edited, hardback book with many authors. In particular, the section devoted to the epidemiological studies implicating β_2 agonists in asthma deaths does not mention the Spitzer study, and "New therapeutic approaches" discusses cyclosporin in two short sentences. Overall, I enjoyed reading this book and found some of the chapters very helpful indeed. I suspect its place is in the hospital library rather than on the study bookshelf.—CMR