Continuous intravenous therapy with theophylline in patients with brittle bronchial asthma

I read with interest the case report (Spielberg and van Denbrink, Eur Respir J., 1, 471-472) from Davos on a patient with brittle asthma treated with a continuous infusion of theophylline. I was surprised to see that our paper on the treatment of brittle asthma with continuous subcutaneous infusions of terbutaline was not referred to [1]. Since that preliminary study which showed excellent control of brittle asthma, a follow-up study about to be published in the British Journal of Diseases of the Chest [2], shows that about 50% of patients with brittle asthma respond very well to subcutaneous terbutaline infusion, and a further 25% improve considerably although not to such a successful degree. One of the main criteria that we use for assessment is the variability in daytime peak flow readings. I was intrigued to see that the patient described by Spielberg and van Denbrink appear to use this as an assessment of the success of therapy.

We believe that patients with brittle asthma have down regulated beta receptors and the surprising thing about these patients is how few side effects they develop while on such treatment, which achieves relatively high levels of terbutaline.

We believe that this form of treatment is very useful in brittle asthma and we would rather use beta agonists than theophyllines in this situation in view of their lack of side effects.

References

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Book reviews

Bacterial Infections of Respiratory and Gastrointestinal Mucosae:

A well-structured up-to-date review of the airway mucosal function by P. S. Richardson opens the book, and the role of the ciliated membrane and mucus transport is discussed. Of interest is the possibility that autonomic innervation can influence ciliary beating and epithelial secretion. Evidence exists that Acetylcholine, the main parasympathetic transmitter, contracts the myoepithelial cells surrounding the submucosal glands and thereby squeezes mucus from the duct system onto the airway surface. This rapidly increases the amount of secretion and also irritants to be expelled by a cough blast. Other aspects of mucus being discussed are the ability of mucus glycoproteins to bind virus and bacteria. It has recently been reported that strands of mucus bind Pseudomonas Aeruginosa to specific receptor sites. Mucus also contains well-known antimicrobial substances like IgA dimers, lysozyme and lactoferon.

Concerning the pathogens affecting the respiratory mucosa, the chapter by R. Wilson and E. R. Moxon discusses the role of Haemophilus influenzae (HI). HI binds both to the epithelial cells and to the mucus layer, presumably as an early step in the colonization process. HI optimizes its own immediate environment by disorganizing ciliary beating and by stimulating mucous production, which hampers mucociliary clearance. HI is also able to synthesize histamine (together with other Gram-negative bacteria) in vivo which may contribute to the bronchospasm often accompanying bronchial infection.

A. Baskerville reviews the pathogenic mechanisms in Legionella Pneumophila disease (LD) where a crucial factor of infection is the size of the aerosol particles, in which the bacteria are inhaled. Autopsies show that LD lesions affect only
the distal respiratory bronchioles and alveoles, not the central airways. For this to occur, particles smaller than 5 µ in diameter are needed, and preferably 2–3 µ in size. Aerosols produced by air conditioning systems and showers contain many particles of this respirable size, whereas cough from infected patients are not contagious since the lesions and bacteria are in the alveoli and the particles coughed up are nonrespirable.

A lucid and interesting review of mucosal immunity is given by J. Bienenstock, pointing out the similarities between the "bronchus associated lymphoid tissue (BALT)" and the "gut associated lymphoid tissue (GALT)". This has been known for some time, but perhaps not wholly considered. Both functional and structural kinship indicates that the normal epithelium in the airways and intestine is capable of processing antigen and thereby initiating immune responses.

There seems to exist forms of communication between the two tissues, lymphocytes taken from either BALT or GALT and transferred to another individual tend to localize in their respective mucosal areas, a sort of "homing" ability. There is also evidence of a direct communication via the CNS such that the large nervous network in the intestine affecting lymphocytes and mastcells in the mucosal surfaces.

We have encountered clinical examples of these complex systems and their interactions, being the case in combined illnesses such as ulcerative colitis/ulcerative colitis and IgA deficiency/coeliac disease, respectively. Among the contributions not discussed above are well written reviews of the pathogenesis of Pseudomonas Aeruginosa in Cystic fibrosis, pathophysiological mechanisms in diarrhoeal diseases and oral vaccines against cholera and E. coli diarrhoea.

This book is recommended to all microbiologically interested clinicians and researchers both in infectious diseases, pulmonology and immunology.

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Biology of Lung Cancer: Diagnosis and Treatment

Although results from lung cancer treatment remain disappointing with less than 15% of lung cancer patients being cured by surgery, radiation or chemotherapy, there has been significant progress in lung cancer biology research during the last years. Hopefully, this research will eventually prepare the ground for new and more successful approaches to early detection and treatment of lung cancer.

The editors of this monograph on biology of lung cancer, written by 32 acknowledged scientists, address their book to pulmonary scientists, clinicians, oncologists, immunologists, molecular and cell biologists, pathologists, thoracic surgeons, and internists. As a pulmonary clinician with a scientific interest in lung cancer treatment I read the book with great interest, but also with some difficulties. It is a lucid and interesting review of mucosal immunity is given by J. Bienenstock, pointing out the similarities between the "bronchus associated lymphoid tissue (BALT)" and the "gut associated lymphoid tissue (GALT)". This has been known for some time, but perhaps not wholly considered. Both functional and structural kinship indicates that the normal epithelium in the airways and intestine is capable of processing antigen and thereby initiating immune responses.

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Sleep Disorders and Respiration. Les Evénements Respiratoires du Sommeil.

The book contains the proceedings of an International Congress about Sleep and Respiration, held in Amiens (France) 19–20 November 1987.

This very interesting topic is well covered in 10 reviews, ranging 7-14 pages, all except one in English. The authors are, in addition to the two editors; D. Kurtz, Strasbourg, A.J. Block, Florida, J.H. Peter, Marburg, G. Coccagna, Bologna, C. Guilleminault, Stanford, D.C. Flaxley, Edinburgh, H. Mathys, Freiburg and N.J. Douglas, Edinburgh. In a comprehensive manner current knowledge of sleep disorders in patients with asthma, other chronic obstructive airways diseases, hypertension and respiratory insufficiency is presented Techniques of polysomnographic recording, patient selection for study, influence of drugs and the prospects of treatment with oxygen and nasal continuous positive airways pressure (CPAP) are described. Most of the reviews have summaries in French and an impressive list, (one of 75) of references. This part of the book is of great interest and easily comprehended.

The rest of the book consists of 47 short abstracts, 1-3 pages in length but of varying quality. 12 of them are in French, and only 4 have an English summary. The presentation of some of these abstracts is poor. There is an author index but no subject index.

The book is recommended largely for its reviews.

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