Sleep-related breathing disorders

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Introduction

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Although we all spend up to one third of our lives asleep, it is only relatively recently that the impact of this unique physiological state on breathing has been systematically explored. The formidable technical problems of making accurate respiratory measurements during sleep and combining them with the detailed neurophysiological recording needed for sleep staging have now been overcome, as have the equally complex problems of handling the enormous amounts of data each study night generates. A large and previously unsuspected population whose breathing is abnormal during sleep has been identified. Some subjects are relatively healthy by day but may develop upper airways obstruction – either total or partial – during sleep. In others the onset of sleep disrupts mechanisms which compensate for their abnormal respiratory mechanics when awake. The problems of sleep-disordered breathing contribute to both the morbidity and, probably, the mortality of such patients. Their identification has become important, not just for prognostic reasons but also because effective treatment can now be offered.

Many respiratory physicians feel uncomfortable with these new developments as much of the knowledge on which they are based is so recent that it did not figure in their undergraduate or postgraduate education. Moreover, the complexity of sleep neurophysiology is itself very daunting. The articles in this series aim to correct some of these deficiencies by

addressing sleep and breathing problems from a respiratory perspective. Although an understanding of the neurological basis of sleep is important to the wider specialist in sleep medicine, the largest number of patients who need overnight investigations are those who have respiratory disorders. It is essential that respiratory physicians feel comfortable in this area and are competent to advise on the development of services to diagnose and treat such patients. Fortunately this can be done without resorting to complex polysomnographic investigations which can be both expensive and cumbersome.

So rapid have developments been that a review series of this size cannot be exhaustive. The topics represented have a strong bias towards obstructive sleep apnoea and its related problems. For many this will be the least familiar area and current views about the frequency, causes, diagnosis, consequences, and treatment with nasal CPAP will be presented. Paediatric aspects of sleep-related breathing disorders are of growing importance and the implications of such illnesses among the wider range of general respiratory medical diseases will be briefly examined. All the contributors are acknowledged experts and have been extraordinarily patient in coping with the editorial process. Hopefully some of their enthusiasm and excitement for this rapidly growing area of respiratory medicine will be transmitted to physicians meeting these problems for the first time.

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