

BOOK
DASH

Principles and practice of geriatric sleep medicine

Pandi-Perumal SR, Monti JM, Monjan AA (Eds). Cambridge, UK, Cambridge University Press, 2010. Hardback: 448 pages. ISBN:978-0-521-89670-2.

Principles and Practice of Geriatric Sleep Medicine is a comprehensive, and much needed book for medical practitioners, allied health as well as for those who are interested in the neuroscience of sleep and treatment of sleep disturbance. It is edited by leaders in the field, and has contributions from most of the eminent researchers and international experts in the field of sleep medicine.

Recent years have witnessed a resurgence in the literature examining the relationship between sleep and brain functioning. Indeed, the field has significantly expanded to recognise the important role of the circadian system as well as the neurobiological aspects of sleep. There is renewed interest in the impact of sleep disturbance in neuropsychiatric and neurodegenerative disorders as well as the significance of sleep disturbance as a prodromal and prognostic feature.

Although most research in the field of sleep medicine is focused on adulthood, and predominantly includes those with insomnia and respiratory problems, the field of geriatric sleep medicine has been typically poorly supported by high calibre detailed empiric research studies. This field is likely to become increasingly relevant as the ageing population increases and there is consequently greater need for appropriate targeted treatments.

This book synthesises what is known about this area and includes four sections, the first of which provides an overview of sleep and normal ageing. This section includes detailed information regarding the

circadian system, mechanisms and consequences of age-related sleep changes, the impact of menopause, autonomic dysregulation and changes in the pharyngeal structure and function. Of direct relevance to the field of neuropsychiatry, this first section includes two chapters that detail recent discoveries and theories of the crucial role of sleep for optimal brain and cognitive functioning. In particular, the chapter by Matthew Walker on neuropsychology and neuroimaging of sleep-dependent memory processing provides fascinating insights into some of the recent research that integrates multiple technologies with sophisticated research designs to unravel the critical role of various sleep stages in memory functioning. While much remains to be discovered in this area, the chapter provides an exciting insight into how a greater understanding of these systems may help scientists to derive targeted treatments for both sleep and cognition in older people. The model presented by Walker is interesting, and the application and testing of this model to those with neuropsychiatric and neurodegenerative conditions may prove to have great clinical translational and remediation capacity.

The second section of the book includes three chapters on neuroendocrine and homeostatic changes in the elderly. These chapters cover neuroendocrine correlates of sleep in the elderly, and changes in melatonin and the role of circadian disruption in Alzheimer's disease, as well as sleep and diabetes. This section is a good synthesis of information on changes in the hypothalamic-pituitary-adrenal axis, the somatotrophin axis, the hypothalamic-gonadal axes and the orexin-hypocretin system and how they relate to various components of the

circadian system. The chapter on melatonin is particularly interesting as it highlights not only the role of this hormone in Alzheimer's disease but also its anti-oxidant and immunomodulatory properties, and the reader is sufficed by a greater appreciation of the practical treatment components of melatonin in Alzheimer's disease as well as prodromal forms of dementia such as mild cognitive impairment.

Part three forms the major portion of the book and includes 20 chapters on various sleep disorders in the elderly. This section is introduced by assessment and diagnosis, and is followed by disorders of the circadian system and nocturia. It then includes chapters on fibromyalgia, pain management, depression and anxiety, Parkinson's disease, Alzheimer's disease, narcolepsy, movement disorders, REM (rapid eye movement) sleep behaviour disorder, sleep apnea, cardiovascular disease, insomnia, sleep in nursing home residents, falls, fatigue and sleepiness, dreaming and dreaming disorders, sleep medication and traffic safety. These chapters are all appropriately clinically focused and highlight the important interrelationships between the sleep system and both central and peripheral mechanisms contributing to sleep disturbance. For a neuropsychiatric audience, this section would have been enhanced by further detail in reference to older people with psychiatric disorders as well as the overlap between disorders of cognition, mood and sleep. However, this scant coverage probably reflects the dearth of studies in this area. In summary, this section would be of interest to a range of general medical practitioners as well as specialists including geriatricians, neurologists and psychiatrists.

The last section provides a very comprehensive set of 11 chapters that focus on a large range of pharmacological and non-pharmacological treatments. While there are many articles currently available that detail some aspect of treatment, none provide this degree of coverage and depth. In particular, the section on non-pharmacological treatments highlights the utility of multi-modal forms of therapy for older people with sleep problems and suggests that these treatments are optimal for sustainable effects, whilst the benzodiazepines and sedative hypnotics may be best suited for short-term treatment. In addition to an overview of psychopharmacology, there is also a chapter on the epidemiology of sleep medication use, management of insomnia, use and caution of

benzodiazepines and effects of psychotropics on sleep architecture. The non-pharmacological treatments include not only the commonly known therapies such as cognitive behavioural therapy but also complementary and alternative therapies, self-help treatments and the effects of napping and light. The book concludes with a section on neuroimaging, which does not seem to be related to treatment but does give a very good overview of the functional neuroanatomy of sleep and how this changes through ageing.

Overall, this book is well written and a pleasure to read. The chapters are well structured and succinct, and present a wealth of up-to-date research. Many are supplemented with summary figures, tables or models. The content is diverse

and is thus likely to appeal to many experienced clinicians. It also includes good introductory chapters and so will be suited to junior researchers and clinicians. It is a holistic book with appropriate emphasis on clinical and practical translation of research findings. I would highly recommend this book for any clinicians and researchers working in the ageing and/or sleep disciplines.

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