

Contents

Preface: Waking Up to Sleep **xi**

Keith Romeo A. Aguilera and Agnes T. Remulla

Sleep Disturbances During Shift Work **1**

April Fatima J. Hernandez, Reinzi Luz S. Bautista, and Cristine Celine Tan

Around 21% of workers reported working on shifts in 2017, and consequently, shift workers experience multiple sleep disturbances such as excessive sleepiness, insomnia, sleep deprivation, and social jet lag. These eventually lead to shift work disorder or exacerbation of other sleep disorders such as insomnia, obstructive sleep apnea, restless legs syndrome, and nonrapid eye movement parasomnia. Despite multiple interventions and guidelines, poor compliance to treatment is often encountered due to temporary relief of sleep disturbances provided by the treatment. Hence there is a need for comprehensive evaluation of those individuals who need to be awake during the night and asleep during the day.

Sleep Disturbance in Pregnancy **11**

Somprasong Liamsoambut and Visasiri Tantrakul

Sleep is vital to life, even when women enter into pregnancy state. Good sleep is important for a healthy pregnancy. Sleep disturbances are common during pregnancy and can be due to the change of pregnancy itself or the results of sleep disorders. There is growing evidence linking sleep disturbances with adverse maternal and fetal outcomes. Differentiation of sleep disorders in order to provide appropriate treatment as well as promoting good sleep for pregnant women is important. A multidisciplinary team to provide sleep care during antenatal period may be needed.

Evaluation and Management of Snoring **25**

Yoke-Yeow Yap

Snoring can be harmless (primary) or a symptom of sleep-disordered breathing (secondary) and should alert the physician to evaluate the patient for risks thereof. Phenotypes of snoring and sleep-disordered breathing (SDB) are anatomic and nonanatomic and identifying these phenotypes and their interrelationships are critical to effective therapy. Mouth breathing alerts the physician to nasal airway obstruction, signals orofacial growth changes in children, and heralds the progression of SDB. Systematic evaluation to establish phenotypes includes assessing sleep habits, comorbidities, upper airway examination, polysomnography, and drug-induced sleep endoscopy. Strategies for treatment should be personalized and precise to the phenotype(s) to achieve the most benefit.

Disrupted Sleep During a Pandemic **41**

Niraj Kumar and Ravi Gupta

The COVID-19 pandemic affected sleep in several people. Though most of the studies argued that age, gender, employment, finances, responsibilities, and exposure to sunlight governed sleep-wake schedule and sleep disturbances, there is also scientific evidence to suggest that these issues could have arisen because of the

infiltration of the central nervous system (CNS) by SARS-CoV-2. Sleep disturbances must be addressed during the pandemic as sleep disturbances and systemic inflammation run in a vicious cycle; quality of sleep and timing of vaccination can influence the immune response to vaccination and subjects having obstructive sleep apnea (OSA) are at higher risk for having SARS-CoV-2 infection-related complications.

Sleep Complaints Among School Children

53

Ngan Yin Chan, Chun Ting Au, Shirley Xin Li, and Yun Kwok Wing

Sleep complaints are common among children. These include both night-time and daytime symptoms, such as trouble falling asleep, problems in maintaining sleep, snoring, and unusual events during sleep and daytime functioning impairment. However, sleep complaints in children are often overlooked and undertreated in clinical practice. Untreated sleep problems may further impact on children's development and will persist into adulthood in some cases. This review summarizes the common sleep complaints and disorders in school children, and provides an overview of the epidemiology, clinical features, consequences, and treatment of the sleep problems.

Insomnia: Focus on Children

67

Montida Veeravigrom and Weerasak Chonchaiya

Pediatric insomnia is relatively common in general pediatric practice and has an even higher prevalence in those with neurodevelopmental disorders. Detailed sleep history, sleep diary, associated daytime symptoms, and factors contributing to insomnia should be thoroughly evaluated to determine the diagnosis and further plan for management. Behavioral management should be the first step for the management of insomnia in children and adolescents. Although there is no FDA-approved medication for the treatment of insomnia in children, some medications may be prescribed with caution, particularly if behavioral management is not effective, in selected conditions, and if the benefits outweigh the risks.

Sleep Disturbances Linked to Genetic Disorders

77

Rimawati Tedjasukmana

Genetic factors are surmised to regulate sleep as evidenced by the heritability of sleep traits, specific genetic polymorphisms of these traits, and familial sleep disorders. Sleep is also a very complex behavior that is regulated by circadian rhythm, homeostatic drive, and other processes. All these processes appear to have genetic factors; however, we still cannot elucidate sleep genes. Recent studies in humans and animal models have uncovered some genetic factors underlying sleep disturbances. In this review, we present an overview of genetical regulation of sleep and genetic factors underlying several sleep disturbances.

Abnormal Sleep-Related Breathing Related to Heart Failure

87

Tripat Deep Singh

Sleep-disordered breathing (SDB) is highly prevalent in patients with heart failure (HF). Untreated obstructive sleep apnea (OSA) and central sleep apnea (CSA) in patients with HF are associated with worse outcomes. Detailed sleep history along with polysomnography (PSG) should be conducted if SDB is suspected in patients with HF. First line of treatment is the optimization of medical therapy for HF and if

symptoms persist despite optimization of the treatment, positive airway pressure (PAP) therapy will be started to treat SDB. At present, there is limited evidence to prescribe any drugs for treating CSA in patients with HF. There is limited evidence for the efficacy of continuous positive airway pressure (CPAP) or adaptive servo-ventilation (ASV) in improving mortality in patients with heart failure with reduced ejection fraction (HFrEF). There is a need to perform well-designed studies to identify different phenotypes of CSA/OSA in patients with HF and to determine which phenotype responds to which therapy. Results of ongoing trials, ADVENT-HF, and LOFT-HF are eagerly awaited to shed more light on the management of CSA in patients with HF. Until then the management of SDB in patients with HF is limited due to the lack of evidence and guidance for treating SDB in patients with HF.

Sleep-Related Breathing Complaints in Chronic Obstructive Pulmonary Disease

99

Albert L. Rafanan and Rylene A. Baquilod

This review presents the normal physiologic changes in ventilation during sleep and how they can be detrimental to chronic obstructive pulmonary disease (COPD). Sleep-related breathing disorders (SRBDs) in COPD lead to higher morbidity and mortality if left unrecognized and untreated. The diagnosis of SRBDs requires a high index of suspicion, as symptoms may overlap with other sleep disorders. Mortality risk is improved when patients with Obstructive Sleep Apnea (overlap syndrome) are treated with positive airway pressure and when long-term nocturnal noninvasive ventilation is started on chronic stable hypercapnic COPD. Treatment of isolated nocturnal oxygen desaturation has not been associated with improved survival.

Sleep and Obesity

111

Ji Hyun Lee and Jahyeon Cho

Sleep and appetite have a circadian tendency with a diurnal rhythm. There is a reciprocal interaction between sleep and obesity. Having poor sleep, in either amount or timing, is associated with difficulty in controlling appetite, resulting in obesity. Being overweight or obese increases the risk of developing sleep disorders such as obstructive sleep apnea, which may further impair sleep quality. Sleep in children and adolescents plays an important role in cognitive, emotional, and physical development. Sleep problems in this age group are linked to obesity, which leads to metabolic syndrome, diabetes, or hypertension in the early stages of life.