BOOK REVIEWS

Sleep Disordered Breathing in Children: A Comprehensive Clinical Guide to Evaluation and Treatment
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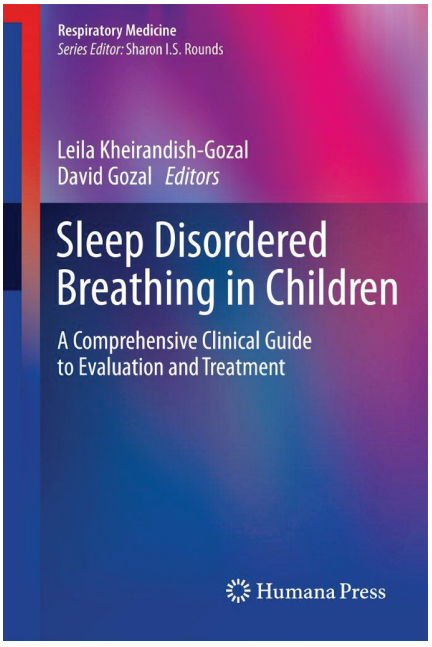

Since its initial description in schoolchildren in 1976, obstructive sleep apnoea (OSA) in infants is increasingly being recognised as a cause of neurocognitive and cardiovascular complications, as well as disturbances of growth and mood, even in young children. There are major differences between sleep disordered breathing (SDB) in children and in adults, including diagnostic criteria, clinical presentation, which may vary according to age, and treatment modalities. In this context, there is a major need for a comprehensive reference text on SDB in children.

Sleep Disordered Breathing in Children: A Comprehensive Clinical Guide to Evaluation and Treatment is written by more than 70 international experts in the field of SDB. The book is divided into six parts reviewing, in detail, several highly relevant aspects of SDB: sleep and upper airway structure during development and their implication in the pathophysiology, diagnostic assessment, epidemiological and clinical aspects of paediatric SDB in the general population and in specific conditions, such as neuromuscular diseases and craniofacial syndromes, neurocognitive and cardio-metabolic implications, and treatment modalities.

The essential feature of OSA is a structurally narrow airway when awake that predisposes to an increased collapsibility and resistance during sleep. Several factors appear to contribute to the development of SDB in children including anatomical structure, neuromotor tone and inflammation. This book discusses the contribution of craniofacial anomalies, nasal obstruction, adenotonsillar hypertrophy and fat depositition in and around the soft tissues of the upper airway in obese children. The potential role of local inflammation with increased expression of mediators of the inflammatory response in tonsillar tissues is also discussed.

Diagnostic assessment is a major challenge in paediatric SDB. This book discusses, in detail, clinical symptoms of paediatric OSA according to age and various associated specific conditions such as obesity, craniofacial syndromes, neuromuscular diseases, cystic fibrosis, epilepsy, sickle cell disease and asthma.

Although full night in-laboratory polysomnography (PSG) remains the gold standard for diagnosing SDB in children, it is expensive and often difficult to obtain. The authors describe the potential interest and limits of various diagnostic tools, including screening questionnaires, actigraphy, limited sleep recordings, multiple sleep latency test and upper airway imaging. One chapter is also dedicated to the concepts of genomics, transcriptomics and proteomics, and their potential for analysing the genetic components of SDB and associated comorbidities. To date, the most common PSG metric applied for OSA diagnosis is the apnoea/hypopnea index (AHI). Unfortunately, there is no consensus on what constitutes "normal" and "disease" with regard to the AHI in children. Therefore, efforts have been made using cluster analysis to create composite scores combining various PSG indices, in order to better define the point of transition from "normal" to "pathological" along the SDB spectrum.

The consequences of untreated SDB in children are also detailed. One major difference between SDB in children compared to adults is that, rather than being sleepy, children with OSA may more often experience an increase in activity levels during the day. The potential mechanisms implicated in this paradoxical behavioural morbidity in OSA are elegantly described. Beside neurocognitive and behavioural disorders, there is also growing evidence in support of an independent association between SDB and cardio-metabolic dysfunction in children. The potential mechanism linking sleep disorders and cardio-metabolic disorders are discussed in detail.

The last part of the book describes treatment options of paediatric SDB. Although adenotonsillectomy remains the first line treatment of OSA in children, it is increasingly being recognised that this treatment alone does not completely resolve all SDB cases. This book describes the risk factors associated with residual SDB after adenotonsillectomy and the alternative treatment modalities, including corticosteroids and leukotriene modifiers, continuous positive airway pressure, and mandibular advancement devices.

One potential limitation of the book is its comprehensive format lending the reader to occasional redundancy and overlap between chapters. However, the main clinical implications that are summarised at the end of most chapters enhance the reader's understanding. Overall, *Sleep Disordered Breathing in Children: A Comprehensive Clinical Guide to Evaluation and Treatment* is a reference book recommended to any clinician working in the field of paediatric SDB.

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