



Neurological Disorders in Primary Care Pediatrics

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Primary care providers see patients with some type of neurological disorder daily. Many of these children may not need to see a neurologist if the provider feels comfortable developing a plan to manage the symptom or complaint. In addition, given the national shortage of child neurologists,¹ it can be challenging to access a specialist in a short-time frame in nonemergent situations, so pediatric care providers often conduct the initial assessment as well as manage common disorders such as headache, dizziness, sleep, and concussion even in more complex situations. Furthermore, primary care providers are frequently the first to suspect a neurogenetic syndrome, such as tuberous sclerosis, and often serve as the “medical home” for these children.

In this issue of *Pediatric Annals*, the authors review several topics that are commonly encountered in pediatrics: sleep problems, headache, dizziness, and syncope. Other areas addressed include the role of providers after a concussion as well as outlining recommendations for diagnosis, management, and surveillance of children with tuberous sclerosis complex (TSC). Although there are a growing number of TSC clinics in the United States, they are not easily accessible to many families so primary care providers assume an important role to ensure appropriate care and surveillance. It is our hope that these articles serve as a reference for providers when questions arise about these disorders; in addi-

tion, the information presented in this issue can guide pediatric practitioners regarding initial evaluations and help to determine when specialist referral is warranted.

Sleep problems and complaints are common in pediatrics, and it is unlikely that a pediatric provider finishes an entire day without discussing sleep with multiple families. Drs. John C. Carter and Joanna E. Wrede, in the article “Overview of Sleep and Sleep Disorders in Infancy and Childhood,” outline the basics of sleep physiology, sleep needs, and pediatric sleep-related disorders. They discuss normal sleep patterns and specific needs from infancy to adolescence. The frequent complaints of insomnia, parasomnias, and sleep-related movement disorders in different stages of childhood are reviewed with recommendations for initial evaluation and management. In addition, normal variants and worrisome signs are reviewed; we hope that this information can help providers allay fears and prompt further evaluation when needed.

Concussion is a major concern for athletes, schools, athletic teams, doctors, and parents. This is an evolving field, and recommendations for best treatment have changed significantly over the past 10 years, and continue to do so. In the article “The Role of Active Recovery and ‘Rest’ After Concussion,” Drs. Jeff Strelzik and Raquel Langdon tackle one of the more challenging questions pediatricians are often asked to address: “What should

‘rest’ mean after concussion?” Concussions have not always been taken seriously and athletes would return to play after “getting their bell rung” (sometimes multiple times in the same game). There have been detrimental consequences to this approach, which has helped to inform many of the protocols now in place. Some of those procedures include recommendations for strict “rest” after a concussion in which patients are told to stay in a quiet, dark place at home, away from school, electronics, homework, friends, and any “normal” activities until symptoms subside. However, there is now concern that this “cocooning” approach may be maladaptive for most people who experience a concussion. The authors review the current evidence regarding rest as well as active rehabilitation or “subthreshold exercise” training, which presently seems to be the best option after concussion.²

Dizziness is a common complaint in teenagers, particularly girls. Dysautonomia and postural orthostatic tachycardia syndrome (POTS) may cause or contribute to light-headedness and syncope. These terms and diagnoses are being used more widely in medical arenas so it is important for providers to understand POTS, when to consider a POTS diagnosis, and its initial management strategies. In the article “Postural Tachycardia Syndrome: Diagnosis and Management in Adolescents and Young Adults,” Dr. Geoffrey L. Heyer reviews the history, definition, diagnosis, and current treatment strategies for POTS.

He also describes different subtypes of POTS and explains how management strategies may vary for children with different POTS symptoms. This article is a resource for when to consider a POTS diagnosis and its treatment options.

Headache is another everyday complaint that most pediatricians encounter. One of the challenges in headache management is the variety of potential causes, which can range from viral infection or depression to malignant brain tumor. Another difficulty is the lengthy list of potential treatments for primary headache disorders in pediatric populations in the absence of rigorous treatment studies. In the article “Childhood Headache: A Brief Review,” I aim to concisely review the evaluation of the child with headache, paying special attention to worrisome causes of head pain. I also review the diagnosis and options for migraine management in children, considering results from the recent CHAMP (Childhood and Adolescent Migraine Prevention) study, which found that topiramate, amitriptyline, and placebo all helped to decrease migraine frequency, but that there was no difference between placebo and active medications.³

The final article focuses on TSC. Although this disorder is not as common as headache or dizziness, it is seen often enough that most pediatric providers will have some interaction with TSC patients; therefore, they should be able to recognize the hallmarks of this

syndrome as appropriate diagnosis and treatment is vital. In the article “Tuberous Sclerosis Complex: A Review,” Dr. Stephanie Carapetian Randle describes the history, epidemiology, and diagnostic criteria of this syndrome that can present in many ways and can cause a wide spectrum of neurological disability. She provides clear recommendations for management and surveillance of the symptoms associated with TSC that can be used as a guide for medical providers working with affected patients and families.

I would like to thank all the contributors for their efforts in bringing this issue on neurology in primary care to fruition. We hope this work serves as a toolbox for pediatric clinicians who are treating children with these neurological conditions and working to minimize disability and hasten a return to health.

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About the Guest Editor

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