

BHIPP BULLETIN

VOLUME 1, ISSUE 5 MARCH, 2016

MEDICATION INTERVENTIONS FOR SLEEP PROBLEMS

This is the final article of a three-part series discussing the assessment and treatment of pediatric sleep disorders. In our last article we examined behavioral interventions for sleep problems, and here we take a look at medications.

If behavioral strategies are ineffective, or if sleep troubles are significantly worsening an existing medical or psychiatric disorder, medication can be considered. Though the medications discussed in this issue have been studied in pediatric populations, most of the data on sleep medications is extrapolated from adult studies. Prior to starting medication, an "exit strategy," criteria for tapering or discontinuing medication, should be discussed.

Over the counter medications include melatonin and antihistamines. Melatonin is typically secreted by the pineal gland during darkness. It has both hypnotic (sleep-inducing) and chronobiotic (clock-altering) properties. When used as a chronobiotic i.e. to "advance the clock" of an adolescent who may tend to fall asleep very late, low doses such as 100mcg can be used, 4-5 hours before desired sleep onset. It has minimal effect on sleep architecture. As a hypnotic, typical doses would be 2.5-3mg for school age children and 5mg for adolescents. Studies in 6-12 year old children with idiopathic insomnia have shown that melatonin can decrease in sleep latency by approximately 30 minutes, and advance sleep set by about an hour. Children with ADHD and ASD may have alterations in melatonin and doses of 1-6mg have been studied in these populations. Of note, while melatonin tends to be well-tolerated, side effects can include hypotension, bradycardia, possible lowering of the seizure threshold, and inhibition of GnRH secretion. Melatonin has a short half-life so is most appropriate for difficulties with sleep onset/initiation rather than sleep maintenance (i.e. middle of the night awakenings).

Antihistamines such as diphenhydramine and doxylamine have also been studied in children. They have also been shown to decrease sleep latency and marginally increase sleep duration. Potential benefits of this class of medications include their rapid onset of action, low cost, and availability in liquid formulations. Side effects include paradoxical excitation (more common in younger children) and anticholinergic side effects (including dry mouth, constipation, urinary retention, and blurred vision). Tolerance to sedation is common, so these are best used for short-term treatment, particularly in the case of comorbid atopic disease.

The most commonly used prescription medications for pediatric insomnia are the alpha agonists clonidine and guanfacine. These medications tend to be rapidly absorbed, have quick onset of action and can be particularly appropriate in cases with co-existing ADHD. It should be noted that immediate release clonidine has a short half life and can be associated with middle-of-the-night awakening (conversely, due to its short half life it can also be used in the setting of middle of the night wakening). Dose range for clonidine is 0.05-0.3mg at night. Side effects include hypotension (and rebound hypertension), and dysphoria. Alpha agonists may also alter sleep architecture (increasing slow-wave sleep and decreasing REM sleep). Alpha agonists are best considered in the setting of comorbid ADHD. Benzodiazepines, while commonly used for adults, are not typically recommended in the pediatric population due to increased risk of disinhibition and abuse potential. Also commonly used in adults, Zolpidem has minimal evidence for use in the pediatric population, with a single controlled study failing to demonstrate evidence of improvement in sleep latency or other objective measures of sleep quality.

-Dr. Rheanna Platt & Dr. Joyce Harrison, BHIPP Consultants

FROM THE BHIPP TOOLBOX



- Howard, Barbara J., and Joyce Wong. "Sleep disorders." *Pediatrics in review/American Academy of Pediatrics* 22.10 (2001): 327-342.
- Pelayo, Rafael, and Michael Dubik. "Pediatric sleep pharmacology." *Seminars in pediatric neurology*. Vol. 15. No. 2. WB Saunders, 2008.



Behavioral Health Integration
in Pediatric Primary Care

Phone & Fax:
855-MD-BHIPP
(855-632-4477)

Website:
www.mdbhipp.org