

## CLIPPINGS

### Theme: Pulmonology

#### At-risk children with asthma (ARC): a systematic review. (*Thorax*. 2018;73:813-24)

The systematic review evaluated the predictors of asthma attacks in children (age 5-12 years). A total of 68 studies were included. The factors associated with greatly increased risk of asthma attacks were: previous asthma attacks (OR between 2.0 and 4.1), persistent asthma symptoms (OR between 1.4 and 7.8) and poor access to care (OR between 1.2 and 2.3). A moderately increased risk was associated with suboptimal drug regimen, comorbid atopic/allergic disease, African-American ethnicity (USA), poverty, and vitamin D deficiency. Environmental tobacco smoke exposure, younger age, obesity and low parental education were associated with slightly increased risk. Knowledge of these factors might help the clinicians in risk reduction of the children with asthma.

#### Predictors of repeated acute hospital attendance for asthma in children: A systematic review and meta-analysis. (*Pediatr Pulmonol*. 2018;53:1179-92)

The meta analysis focuses on a very relevant issue of predictors for repeated hospital admissions in children with asthma. Three randomized controlled trials (RCTs) and 33 observational studies were included; 31 from Anglophone countries and none from Asia or Africa. Previous history of emergency or hospital admissions for asthma, younger age, African-American ethnicity, and low socioeconomic status increased risk of subsequent emergency department and hospital readmissions for acute asthma. Overall, there was a paucity of data from with very few high-quality studies, and no study from Asian subcontinent. Further research is required to better quantify the risk of future attacks requiring hospital admissions.

#### Electronic monitoring of adherence to inhaled corticosteroids: an essential tool in identifying severe asthma in children. (*Eur Respir J*. 2017;50:pii:1700910)

Severe therapy-resistant asthma can only be diagnosed if factors such as adherence, inhaler-spacer technique, environmental factors and co-morbid conditions have been adequately addressed. The most difficult is the assessment of adherence in clinical practice. Multiple studies have shown that many children with severe asthma on GINA Step 4 of treatment are actually not using the prescribed number of doses. With the use of this electronic monitoring device, it would become easier to distinguish between children who

are not responding due to dosage issue or are truly therapy-resistant. This would help rationalize a step up of therapy at this level. Electronic monitoring is essential for pediatricians dealing with children having difficult-to-treat asthma.

#### Intravenous magnesium sulfate for acute wheezing in young children: a randomised double-blind trial. (*Eur Respir J*. 2018;51:pii:1701579)

Magnesium sulfate has been shown to be an effective treatment in older children with asthma exacerbations, but it has not been investigated in acute severe virus-induced wheezing in young children. The study enrolled 61 children aged 6 months to 4 years. Children with acute viral infection and severe wheezing [score of  $\geq 6$  points by the Respiratory Distress Assessment Instrument (RDAI)] were included. Change in the severity of wheezing from baseline to 6 h after the treatment, as measured by mean (SD) RDAI scores, was 4.7 (2.6) in the magnesium sulfate group and 4.2 (4.2) in the placebo group (mean difference 0.5, 95% CI -1.3 to 2.3,  $P=0.594$ ). Intravenous magnesium sulfate was ineffective in treating acute severe virus-induced wheezing in young children, in contrast to the previous efficacy demonstrated in older children.

#### Association between mild or moderate obstructive sleep apnea-hypopnea syndrome and cognitive dysfunction in children. (*Sleep Med*. 2018;50:132-6)

Children with obstructive sleep apnea (OSA) can have neurocognitive and behavioral problems, including cognitive impairment. This study investigated the association between mild or moderate childhood OSA and cognitive dysfunction. A total of 59 children (age 4-12/ years) diagnosed with mild or moderate obstructive sleep apnea-hypopnea syndrome (OSAHS) by polysomnography and 60 age- and sex-matched healthy children were included. The China-Wechsler Younger Children Scale of Intelligence and China-Wechsler Intelligence Scale for Children were used to evaluate the cognition of the participating children aged  $<6$  years and  $\geq 6$  years, respectively. In both subgroups, children with OSA had significantly lower scores of full-scale and verbal IQ, comprehension test, and visual analysis than the healthy children (all  $P < 0.05$ ). In view of this association with cognitive dysfunction, there is an immediate need to increase the awareness of childhood OSA syndrome and its associated complications amongst parents and healthcare providers.

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