What's Making News?

Pediatric Infectious Disease (2021): 10.5005/jp-journals-10081-1322

Source: Green C, Krafft H, Guyatt G, Martin D. Symptomatic fever management in children: A systematic review of national and international guidelines. Plos One 2021;16(6):e0245815

Several health organizations have developed clinical practice guidelines (CPG) for the symptomatic management of fever in children, but a comprehensive assessment of the level of evidence of the recommendations in these guidelines has not yet been carried out. This systematic review attempts to assess the body of evidence related to a single question, i.e., the threshold for initiating antipyresis. The level of evidence for each recommendation was assessed using the criteria of the Oxford Center for Evidence-Based Medicine (OCEBM). The GRADE assessment revealed a very low level of evidence for a threshold for antipyresis. There is no one recommendation that all guidelines agree with, and many disagree with the evidence; this is true even for current guidelines. The threshold question is fundamental and has not yet been answered and the recommendations for the most frequent intervention, i.e., antipyresis still remains problematic.

Source: Chung E, Chow EJ, Wilcox NC, Burstein R, Brandstetter E, Han PD, Fay K, Pfau B, Adler A, Lacombe K, Lockwood CM. Comparison of symptoms and RNA levels in children and adults with SARS-CoV-2 infection in the community setting. JAMA Pediatrics 2021

In this study, the authors compared symptoms and viral load in youngsters and adults with SARS-CoV-2. The SARS-CoV-2 RNA levels were evaluated through Ct values and were found to be significantly elevated in symptomatic people than in asymptomatic people and no considerable age-associated variations were found. In simple words, the viral load was the same in children and adults.

Source: Payne AB, Gilani Z, Godfred-Cato S, Belay ED, Feldstein LR, Patel MM, Randolph AG, Newhams M, Thomas D, Magleby R, Hsu K. Incidence of multisystem inflammatory syndrome in children among US persons infected with SARS-CoV-2. JAMA Network Open 2021;4(6):e2116420

The researchers found that the incidence of MIS-C was 5.1 persons per 1 million person-months. Incidence per 1 million person-months was higher among Black, Hispanic or Latino, and Asian or Pacific Islander persons compared with Whites (adjusted incidence rate ratios, 9.26, 8.92, and 2.94, respectively). Per 1 million SARS-CoV-2 infections, the incidence of MIS-C was 316 persons and was higher among Black, Hispanic or Latino, and Asian or Pacific Islander persons compared with Whites (adjusted incidence rate ratios, 5.62, 4.26, and 2.88, respectively). Incidence was highest among children aged 5 years or younger and those aged 6–10 years (4.9 and 6.3 children per 1 million person-months, respectively). "These estimates indicated that MIS-C was a rare complication associated with SARS-CoV-2 infection in this cohort overall", the authors write. In simple words, about 1 in every 3,000 children who got COVID ended up with MIS-C.

Source: Antoon JW, Hall M, Herndon A, Johnson DP, Brown CM, Browning WL, Florin TA, Howard LM, Grijalva CG, Williams DJ. Prevalence, risk factors, and outcomes of influenza-associated neurologic complications in children. The Journal of Pediatrics 2021

Researchers aimed at ascertaining the frequency of neurologic complications associated with influenza in hospitalized children. Children (2 months through 17 years of age) with influenza who were discharged from 49 children's hospitals in the Pediatric Health Information System during the influenza seasons of 2015 to 2020 were assessed in this cross-sectional study. They identified 29,676 children hospitalized with influenza; 2,246 of these children (7.6%) had a concurrent diagnosis of a neurologic complication; febrile seizures (5.0%), encephalopathy (1.7%), and non-febrile seizures (1.2%) comprised the most frequent of the complications. Overall, children hospitalized with influenza commonly experience neurologic complications, especially those with chronic neurologic conditions. Worse outcomes are observed in correlation with the occurrence of these complications. Findings thereby highlight the strategic relevance of influenza immunization and treatment, especially in high-risk populations.

Source: Bengnér J, Quttineh M, Gäddlin PO, Salomonsson K, Faresjö M. Serum amyloid a – A prime candidate for identification of neonatal sepsis. Clinical Immunology 2021:108787. https://doi.org/10.1016/j.clim.2021.108787

In view of the common occurrence of neonatal sepsis, its correlation with lethal consequences, as well as dissatisfaction identified among Swedish neonatologists with the available biomarkers, researchers herein investigated the kinetics of 15 biomarkers simultaneously: ferritin, fibrinogen, granulocyte colony-stimulating factor (G-CSF), interferon (IFN)-γ, interleukin (IL)-1β, -6,-8, -10, macrophage inflammatory protein (MIP)-1β, procalcitonin, resistin, serum amyloid A (SAA), tumor necrosis factor (TNF)-α, tissue plasminogen activator-3, and visfatin. From a neonatal intensive care unit, they recruited 68 newborns ≥28 weeks of gestational age to the study group (SG), and 51 to the control group (CG). Depending on clinical findings, three subgroups were formed in the study group: confirmed sepsis (CSG), suspected sepsis (SSG), and no sepsis. Researchers herein introduced a function of time-formula for the theoretical prediction of biomarker levels at any time-point. Per findings, SAA is suggested to have the most favorable kinetics with respect to diagnosing neonatal sepsis, among the biomarkers studied. In addition, it is readily available methodologically, making it a prime candidate for clinical use.

Source: Messina NL, Pittet LF, Gardiner K, Freyne B, Francis KL, Zufferey C, Abruzzo V, Morrison C, Allen KJ, Flanagan KL, Ponsonby AL. Neonatal BCG vaccination and infections in the first year of life: the MIS BAIR randomized controlled trial. The Journal of Infectious Diseases 2021. https://doi.org/10.1093/infdis/jiab306

Studies have described beneficial off-target effects of bacille Calmette-Guérin (BCG) vaccination that may include protecting against non-mycobacterial infectious diseases. Researchers herein examined if neonatal BCG vaccination decreases lower respiratory tract infections (LRTI) in infants in the MIS BAIR trial. In this investigator-blinded trial, randomization of 1,272 neonates in Australia was done to receive BCG-Denmark vaccination or no BCG at birth. Findings yielded insufficient evidence in support of using neonatal BCG vaccination to avert LRTI in the first year of life in high-income settings.

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