

early childhood and suggests that prevention strategies are needed to impact long-term outcomes.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017-2475PPP

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Diagnostic Value of Serum Baseline Tryptase Levels in Childhood Asthma and Its Correlation With Disease Severity

Gao S, Fan J, Wang Z. *Int Arch Allergy Immunol*. 2016;171(3-4):194-202

PURPOSE OF THE STUDY. To determine if the measurement of serum baseline tryptase (sBT) levels can accurately diagnose pediatric asthma and predict asthma severity.

STUDY POPULATION. The study included 114 asthmatic children between the ages of 5 and 12 years. Within the cohort, 36 children had mild intermittent asthma, 38 had mild persistent asthma, and 40 had moderate to severe persistent asthma. In addition, 34 age-matched healthy children were included as controls.

METHODS. Serum baseline tryptase levels were measured in all asthmatic children and healthy controls. Asthma severity was assessed for asthmatic children using asthma serum markers (total IgE, interleukin-13, interferon- γ), childhood asthma control tests (C-ACT), GINA guideline-based severity evaluations, and pulmonary function tests. The diagnostic accuracy of sBT levels was assessed by receiver operating characteristic (ROC) analysis. The correlation between sBT levels and asthma severity was assessed by Pearson and Spearman correlation tests.

RESULTS. Median sBT levels were significantly greater in the mild persistent (4.2 μg ; range 1.6-6.0) and severe persistent (4.7 μg ; range 1.8-7.8) asthma groups compared with those with mild intermittent asthma and healthy controls. ROC curve analysis showed that sBT levels are both sensitive (75.4%) and specific (88.2%) in discriminating asthmatic children from healthy controls at a cut-off value of 3.2 μg . ROC curve analysis showed that sBT levels are considerably sensitive (85.9%) and specific (88.9%) in distinguishing patients with persistent asthma from intermittent asthma at a cut-off value of 3.6 μg . Correlation analysis revealed that sBT levels strongly correlated with C-ACT scores, serum IgE levels, eosinophil counts, pulmonary function parameters, and IL-13 levels in all asthma subgroups.

CONCLUSIONS. Serum blood tryptase levels may help support the diagnosis of asthma in children and predict disease severity.

REVIEWER COMMENTS. Tryptase is a marker of human mast cell activation, and elevated levels have been associated with increased risk of insect venom hypersensitivity and ana-

phylaxis in children with food allergies. This is one of the first studies to suggest a role for serum blood tryptase levels in the diagnosis of asthma. This marker could support the diagnosis of asthma in pediatric patients who are too young for or are unable to complete pulmonary function tests.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017-2475QQQ

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Use of Management Pathways or Algorithms in Children With Chronic Cough: CHEST Guideline and Expert Panel Report

Chang AB, Oppenheimer JJ, Weinberger MM, et al. *Chest*. 2017;151(4):875-883

PURPOSE OF THE STUDY. Use of cough algorithms or pathways can potentially lead to earlier diagnosis and reduce morbidity, unnecessary costs, and medication use associated with chronic cough. The 2006 CHEST guidelines on chronic cough in children advocated use of a cough pathway based on limited data, and research in chronic cough has progressed in the past decade. This study looked at 10 years of systematic reviews to present the summary of evidence behind these CHEST recommendations.

STUDY POPULATION. The age cutoff for the CHEST cough guidelines is ≤ 14 years. Chronic cough is defined as the presence of daily cough for at least 4 weeks in duration.

METHODS. Data were collected from systemic reviews, existing guidelines, and primary studies published in English until August 2015. The study then examined various aspects in the approach to chronic cough management in children based on key questions (KQs) by using the Population, Intervention, Comparison, Outcome format. CHEST methodical guidelines and Grading of Recommendations Assessment, Development, and Evaluation framework were used to support the evidence-based graded recommendations. A consensus-based Delphi method was employed for the final grading.

RESULTS. There is high-quality evidence that the use of a systemic approach to pediatric-specific cough management improves clinical outcomes and that management should be based on cough characteristics and associated clinical history. Although there was evidence from several pathways, the highest evidence was from the use of the CHEST approach.

CONCLUSIONS. CHEST pediatric chronic cough guidelines have been around for over a decade but were initially based on limited evidence. There are now more studies showing high-quality evidence for standardizing the management of cough >4 weeks in children ≤ 14 years of age to improve our diagnosis of these children, manage them more appropriately, and improve quality

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Pediatrics 2017;140;S212

DOI: 10.1542/peds.2017-2475QQQ

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