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In Practice

Comparison of Pediatric and Adult Systemic Reactions to Subcutaneous Immunotherapy

Lim et al 1241

What is already known about this topic? Little is known about the safety of subcutaneous immunotherapy (SCIT) in children; no dose-response studies with SCIT have been published in the pediatric age group, and the reporting of safety data has varied widely.

What does this article add to our knowledge? This article contributes substantial knowledge with respect to the rates of systemic reactions in children and adults.

How does this study impact current management guidelines? This study suggests that specific pediatric-tailored doses of allergen subcutaneous immunotherapy and build-up schedules might be helpful with regard to limiting systemic reactions.

Risk Factor Analysis of Anaphylactic Reactions in Patients With Systemic Mastocytosis

Gülen et al 1248

What is already known about this subject? Anaphylaxis is a common feature in patients with mastocytosis; however, not all patients with mastocytosis experience anaphylaxis. Presently, there are no predictive markers to discriminate patients with mastocytosis at high risk of anaphylaxis from those at low risk.

What does this article add to our knowledge? This is the first study to demonstrate that patients with mastocytosis with anaphylaxis display unique clinical and biological features. A risk analysis model for anaphylaxis was developed and translated into a clinical scoring system.

How does this study impact current management guidelines? The risk assessment tool described here may provide a simple method of identifying and alerting patients with mastocytosis at high risk of anaphylaxis who would benefit from self-injectable epinephrine.

Anaphylaxis in the Pediatric Emergency Department: Analysis of 133 Cases After an Allergy Workup

Alvarez-Perea et al 1256

What is already known about this topic? Studies on pediatric anaphylaxis are scarce, and most are from the United States and Canada. Anaphylaxis is underdiagnosed, underreported, and undertreated. The characteristics of pediatric anaphylaxis differ from those of adults and according to age range.

What does this article add to our knowledge? The incidence of pediatric anaphylaxis in a tertiary hospital in Madrid, Spain, was higher than has been reported in adults. Infants were the most frequently exposed group. There was a considerable discrepancy between the etiology of anaphylaxis suspected in the pediatric emergency department and the final diagnosis.

How does this study impact current management guidelines? Anaphylaxis workups in children should target food allergy. Guidelines must be implemented to prevent recurrences. Children should be offered an allergy workup. The etiology of anaphylaxis should be confirmed on the basis of allergological data.

Fatal Anaphylaxis to Yellow Jacket Stings in Mastocytosis: Options for Identification and Treatment of At-Risk Patients

Vos et al 1264

What is already known about this topic? Although patients with indolent systemic mastocytosis (ISM) are at an extremely high risk for severe and recurrent systemic reactions to yellow jacket (YJ) stings, demonstration of sensitization is especially challenging because YJ venom specific IgE (sIgE) levels are regularly reported below 0.35 kU_A/L.

What does this article add to our knowledge? Without immunotherapy, 97.5% experience a resystemic reaction, of which 90.6% are severe. The current reference value of 0.35 kU_A/L yields a sensitivity of 77.6% while the optimal diagnostic accuracy is achieved at 0.17 kU_A/L.

How does this study impact current management guidelines? Our data show the need for regular sIgE screening and an adjusted lower clinical threshold of YJ venom sIgE in patients with ISM. We recommend discussing the possibility of venom immunotherapy with all patients with ISM with YJ venom sIgE above the proposed cutoff.

Temporal Trends in Epinephrine Dispensing and Allergy/Immunology Follow-up Among Emergency Department Anaphylaxis Patients in the United States, 2005-2014

Motosue et al **1272**

What is already known about this topic? Previous studies suggest poor rates of concordance with emergency department (ED) post-discharge anaphylaxis care guidelines as demonstrated by low rates of epinephrine autoinjector (EAI) prescriptions and allergy/immunology (A/I) referrals.

What does this article add to our knowledge? Based on administrative claims data, 46% of patients filled an EAI prescription and 29% had A/I follow-up within 1 year of an ED anaphylaxis visit. Overall rates remained suboptimal with a minimal change from 2005 to 2014.

How does this study impact current management guidelines? Low rates of EAI dispensing and A/I follow-up suggest that additional patient and physician education is needed. Guidelines could be improved by specifically addressing if EAI prescribing is necessary for patients with a medication trigger.

Anaphylaxis and Clinical Utility of Real-World Measurement of Acute Serum Tryptase in UK Emergency Departments

Buka et al **1280**

What is already known about this topic? Acute serum tryptase can be raised in anaphylaxis and current British guidelines recommend serial measurements. Sensitivity and specificity is published from the controlled environment of allergen challenge but not from the emergency department.

What does this article add to our knowledge? This British study is the first to document the sensitivity, specificity, and positive and negative predictive values of acute serum tryptase in emergency department anaphylaxis. Acute serum tryptase level of more than 12.4 ng/mL carries a high positive predictive value and specificity but poor sensitivity.

How does this study impact current management guidelines? Optimal real-world sampling of acute serum tryptase is difficult and acute serum tryptase is a poor biomarker for anaphylaxis. However, acute serum tryptase is useful in some situations to differentiate anaphylaxis from its mimics and should remain part of anaphylaxis assessment.

Reviewing the Content and Design of Anaphylaxis Management Plans Published in English

Mercer et al **1288**

What is already known about this topic? Anaphylaxis management plans (AMPs) are recommended for all patients in international guidelines, and there are a number of plans published globally. Past research has recommended components to be included in AMPs.

What does this article add to our knowledge? Forty-one plans were identified and had their design and content catalogued. No plans contained all previously recommended components. Other key instructions to patients were missing from plans regarding autoinjector usage and patient positioning.

How does this study impact current management guidelines? Clinicians must be selective in choosing the optimal AMP for their patients. Clinicians should be aware that currently available AMPs do not include all recommended components. Future plans should consider including patient positioning guidance.

Further Evaluation of Factors That May Predict Biphasic Reactions in Emergency Department Anaphylaxis Patients

Lee et al **1295**

What is already known about this topic? Biphasic reaction is a recurrence of anaphylaxis symptoms without reexposure to an inciting trigger.

What does this article add to our knowledge? The rate of biphasic reaction meeting National Institutes of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network criteria was 4%. Prior anaphylaxis, unknown inciting trigger, and delayed epinephrine use were risk factors; patients with none of the identified risk factors had a 1.6% risk of a biphasic reaction, whereas patients with all 3 risk factors had a 20% risk of a biphasic reaction.

How does this study impact current management guidelines? The presence or absence of these risk factors can assist clinicians in optimizing the duration of observation for patients with anaphylaxis.