661 Intravenous Access Is Rarely Necessary For FPIES Oral Food Challenges

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RATIONALE: There are no internationally agreed upon protocols for food protein induced enterocolitis (FPIES) oral food challenges (OFCs) and the necessity of intravenous (IV) access is uncertain. FPIES OFCs performed at the Children's Health Food Allergy Center were reviewed to determine the frequency of IV placement and its utilization for reactions.

METHODS: Retrospective chart review of FPIES OFCs from July, 2010 to August, 2022. Demographics, prior reaction history (implicated food, symptoms, treatment, emergency room visit) and OFC-related data including IV placement, challenge outcome, reaction, and treatment were evaluated.

RESULTS: One hundred eight patients (54 male, 54 female) underwent 185 FPIES OFCs. IV access was obtained prior to 44 OFCs whereas 141 OFCs were performed without IV placement. Reactions occurred in 15.6% OFCs (29/185) and were treated with PO ondansetron (4/29), IM ondansetron (9/29), IV ondansetron (6/29), antihistamines (2/29), no treatment (2/29), or IV/IM ondansetron and IV fluids (6/29). IV rehydration after anti-emetics was administered in 3.2% (6/185) of total OFCs performed. Of these challenges requiring IV rehydration, IV access was placed prior to challenge in 3 OFCs and was required after reaction in 3 OFCs. No reactions necessitated emergency room transfer. Challenged foods in OFCs requiring IV rehydration were peanut, soy, milk, baked egg, wheat, and beef.

CONCLUSIONS: FPIES OFC reactions infrequently require IV rehydration, and outcomes are similar whether IVs were placed prior to the OFC or during the reaction. IV placement prior to FPIES OFCs may not be necessary.

662 Anti–IL-13 (cendakimab) administration improves esophageal gene expression in eosinophilic esophagitis

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RATIONALE: The molecular pathogenesis of the type 2 inflammatory disease eosinophilic esophagitis (EoE) is largely driven by IL-13-mediated effects. A humanized monoclonal anti-IL-13 antibody (cendakimab) lowered esophageal eosinophils and improved outcomes in clinical trials. We aimed to determine how systemic cendakimab administration impacted local esophageal gene expression in a substudy of a double-blind, placebo-controlled phase 2 trial (NCT02098473).

METHODS: EoE-related transcripts were quantified in biopsies collected at baseline (week 0) and after 16 weekly injections (week 16) of cendakimab (180 mg or 360 mg).

RESULTS: Cendakimab at either dose reversed the gene expression profiles of cardinal genes and molecular pathways involved in EoE pathogenesis compared with placebo. These changes included those in genes involved in IL-13 signaling (eg, *CCL26,* 180 mg: 16-fold decrease, $p=3.6\times10^{-11}$; 360 mg: 16-fold decrease, $p=4.9\times10^{-18}$), mastocytosis (eg, *CPA3*, 180 mg: 4.1-fold decrease, $p=4.01\times10^{-4}$; 360 mg: 4.7-fold decrease, $p=1.1\times10^{-6}$; *TPSB2/TPSAB1*, 180 mg: 2.6-fold decrease, $p=3.1\times10^{-3}$; 360 mg: 4.2-fold decrease, $p=6.6\times10^{-8}$), epithelial differentiation (eg, *DSG1*, 180 mg: 12.3-fold increase, $p=5.0\times10^{-4}$; 360 mg: 6.7-fold increase, $p=2.8\times10^{-3}$), and remodeling (eg, *POSTN*, 180 mg: 16-fold decrease, $p=8.9\times10^{-10}$; 360 mg: 16-fold decrease, $p=1.0\times10^{-11}$). Transcript changes correlated with histological and endoscopic observations. Patients who achieved histological remission after cendakimab treatment (ie, responders) exhibited significantly greater improvement in post-treatment versus baseline expression in a subset of genes (n = 8, including *CCL26 and CPA3*) compared with patients who did not (ie, non-responders).

CONCLUSIONS: Cendakimab treatment improves esophageal gene expression in patients with EoE, and the changes in transcripts correlate with histological and endoscopic improvements.

663 Impact of EMR Intervention on Reducing Food Allergy Panel Testing

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RATIONALE: Indiscriminate food allergy (FA) screening can result in unnecessary food avoidance and anxiety. A retrospective chart review of 236 pediatric patients with FA testing at our institution revealed that the majority (76%) of testing was done for non-IgE mediated symptoms, such as chronic abdominal pain and behavioral issues.

METHODS: A quality improvement project using an electronic medical record (EMR) intervention consisting of a hard-stop alert with FA panel order placement, and recommendation of targeted testing instead, was implemented in February 2021. To evaluate the effectiveness of the intervention, we conducted a retrospective review of pediatric and adult patients in UC Davis-affiliated outpatient clinics for whom FA panels were ordered 12 months prior to and following the intervention.

RESULTS: A total of 318 charts were reviewed. In the year post-intervention, 98 FA panels were ordered, a 55.5% reduction from the previous year. Pre-intervention, 18.3+/-7.2 food panels per month were ordered, compared to 8.1+/- 1.8 post-intervention ($p<0.0001$). 25 patients total (7.9%) had symptoms consistent with IgE-mediated FA. The most common presenting symptoms were chronic abdominal pain (37.4%) and recurrent rash (22.3%). For those with positive tests, 42.2% were instructed to eliminate the food from their diet, while 49% of patients were given no clear dietary instructions.

CONCLUSIONS: Inappropriate food IgE testing remains overutilized for patients with chronic, nonspecific symptoms resulting in unnecessary and potentially harmful food elimination. An EMR alert is an effective strategy to reduce FA panel ordering.