Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

and chest tightness (80%); facial, tongue, and throat swelling (73%); and hives, reddening of skin (65%). The needle in the epinephrine injectable device was the main reason for delay in use.
Conclusion: There are significant delays in use of an epinephrine injectable device. This hesitation is predominantly caused by a fear of needles. This underscores the need to develop non-needle-based epinephrine modalities to treat severe allergic reactions.

2021 Community Grant Recipient

P007

PENICILLIN ALLERGY DELABELLING IN A PEDIATRIC PRIMARY CARE SETTING

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Introduction: Penicillin allergy labels are common in childhood; however, over 95% of patients with a penicillin allergy label can safely tolerate penicillin. Previous studies have demonstrated the safety and efficacy of direct amoxicillin challenges in children with a penicillin allergy label. Novel strategies are needed to increase access to penicillin allergy testing beyond specialist centers. We report the initial results of a prospective pilot study of pediatric primary care-driven direct amoxicillin challenges in delabeling penicillin allergy.
Methods: Children (2-18 years old) with a penicillin allergy label presenting for a routine visit at an outpatient general pediatrics clinic were recruited. Patients with an index history consistent with a severe cutaneous adverse reaction to penicillins were excluded. A two-step direct amoxicillin challenge (total dose 250mg) was offered with a 60 minute observation during which patients completed their routine pediatrician visit. Delayed symptoms were assessed via phone call 7-10 days post challenge. The primary outcome was the number of patients for which direct amoxicillin challenge was completed.
Results: Of 87 patients screened, 58 were eligible, 39 were interested in participating, and 12 completed amoxicillin challenges so far. Fear of worsened reaction was the most reported reason for not proceeding with challenge. All 12 children who underwent graded amoxicillin challenge passed without any immediate reactions. At the 7-10 day follow-up, only one patient had a delayed rash which had resolved with oral antihistamines.
Conclusion: These preliminary results demonstrate that graded oral amoxicillin challenges can be performed in the pediatric primary care setting during routine visits.

P008

EPINEPHRINE VIA NEEDLE-FREE DEVICE WOULD BE ADMINISTERED FASTER AFTER SYMPTOMS: RESULTS OF A PATIENT/CAREGIVER SURVEY

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Introduction: Intramuscular epinephrine is first-line treatment for severe allergic reactions. However, patients/caregivers often hesitate before using an epinephrine injectable device, endangering themselves or their child because progression of an allergic reaction can be quick and unpredictable. The time people wait before device use, what triggers use, and reasons for hesitation are not understood. Insight was sought regarding time to device use after symptom development and triggers for use.
Methods: A 20-minute double-blind survey of patients/caregivers who used an epinephrine injectable device within the preceding 12 months was conducted (exempt from IRB approval). Respondents were asked questions about their/their child's allergy, symptoms that triggered device use, and reasons for hesitation.
Results: A total of 200 individuals responded (caregivers and patients, n=100 each). Average time between symptom development and device use was 8.8 minutes, and the needle in the injectable device was the main reason for delay. When respondents were presented with a needle-free delivery device concept for administering epinephrine, estimated time to use was reduced to 4.9 minutes. A needle-free device was perceived as easier/less complicated and less painful to use; the lack of a needle would eliminate harm errors (e.g., striking bone or accidental intravenous injection). Respondents noted that they would be more likely to use a needle-free device at the onset of symptoms.
Conclusion: A needle-free option for administering epinephrine would be used more quickly after symptoms developed and would be easier to use versus an injectable device. This underscores the need to develop epinephrine modalities utilizing a non-needle-based delivery system.

P009

CHARACTERIZING OVERLAPPING RADIOCONTRAST MEDIA, SHELLFISH, AND IODINE ALLERGIES

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Introduction: Patients with documented radiocontrast media (RCM) hypersensitivity reactions may require allergy testing or pretreatment prior to imaging with RCM, which may delay studies and is not without side effects. An RCM allergy is often incorrectly associated with iodine and shellfish allergies, but the frequency of this is not well characterized.
Methods: This is a retrospective chart review of patients within the electronic medical record (EMR). Terms used to indicate RCM, iodine, and shellfish allergies were obtained and the EMR was searched in October 2021 for patients with one or more qualifying allergies. Demographic information and allergy data was obtained for these patients.
Results: 21745 patients were identified: 14968 female, 6775 male, and 2 other. Among these patents, there were 24333 qualifying allergies: 6752 RCM (31.05%), 7398 iodine (34.02%), and 10183 shellfish (46.83%). 19338 patients (88.93%) had one qualifying allergy, 2226 patients (10.24%) had two (840 contrast and iodine, 363 contrast and shellfish). 181 patients (0.83%) had all 3. Contrast reactions were: 581 anaphylaxis (8.6%), 1961 cutaneous (29%), 183 gastrointestinal (2.71%), 187 respiratory (2.77%), 3578 other/unknown (52.99%).
Conclusion: The majority of patients with documented RCM allergies had cutaneous or unspecified reactions, with 17.82% of these patients having overlapping contrast and iodine (12.44%) or shellfish (5.38%) allergies. It is unclear whether this represents true IgE mediated allergic reactions. More work is needed to standardize reaction documentation to identify true hypersensitivity reactions versus adverse reactions or side effects and to prevent unnecessary testing.

P010

COVID-19 VACCINE REACTIONS AND SUSPECTED POLYETHYLENE GLYCOL ALLERGY: A PEDIATRIC CASE SERIES

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Introduction: Studies have demonstrated tolerance in high risk patients receiving Covid-19 m-RNA vaccines containing polyethylene glycol (PEG) with rare reactions.There is limited pediatric data regarding safety in receiving PEG containing Covid-19 vaccines with

a history of prior hypersensitivity reactions to PEG containing chemotherapy (PEG-CTX).
Methods: Retrospective chart review from referred Pediatric Oncology patients with a history of prior reactions to PEG-CTX (01/2020-04/2022). Selective skin testing was completed using PEG molecular weigh 3350 and m-RNA Covid-19 vaccines with controls.
Results: Four pediatric patients (≤18 years old) had evidence suggestive of an immediate, hypersensitive reaction to PEG-CTX following treatment for acute lymphoblastic leukemia (ALL). All 4 patients experienced prior reactions to chemotherapy (L-Asparaginase). Symptoms included: hypotension, flushing, urticaria, angioedema, emesis and tachycardia. Due to prior reactions, these high-risk patients were not administered PEG containing Covid-19 vaccines due to safety concerns. Non-PEG containing Covid-19 vaccines were not approved for use in pediatric patients. Allergy skin testing (skin prick and intradermal) was completed in all four patients. One of 4 patients tested positive to both PEG and PEG containing Covid-19 vaccine. The 3 negative patients were administered PEG containing Covid-19 vaccine with monitoring for one hour without symptoms.
Conclusion: Pediatric patients in our study with prior reactions to PEG-CTX tolerated PEG containing Covid-19 vaccines. Further studies are needed in assessing PEG allergy in high-risk patients with a past history of reactions to PEG-CTX.

P011

REVISITING HYPERSENSITIVITY REACTIONS TO THE MRNA COVID-19 VACCINE: TOLERANCE AFTER PREVIOUS HISTORY OF ANAPHYLAXIS

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Introduction: Based on the current evolving knowledge regarding potential mechanisms of immediate reactions to the COVID-19 vaccine, we wanted to study the clinical tolerance of subsequent mRNA vaccination in patients with reported anaphylaxis to either the Moderna® mRNA-1273 or Pfizer-BioNTech® BNT162b2 vaccine.
Methods: We revaluated a subgroup of 6 patients that reported anaphylaxis to the first COVID-19 vaccine (5/6 – level 2 Brighton criteria classification and 1/6 level 4), as part of a large prospective COVID-19 Vaccine study (ARCOV). Among these, PEG skin test was positive for 2/6 patients. Patient had safely received their second dose using a desensitization protocol and were offered a booster dose of the Pfizer-BioNTech COVID-19 vaccine using a two-step blinded placebo-controlled challenge with a 1-hour observation period in a monitored setting.
Results: All 6 patients were females with a history of atopy and anaphylaxis to other agents. One patient was premedicated with prednisone and antihistamine. One patient refused, one tolerated a single dose challenge in the community, 3 tolerated a 2-step challenge and 2 presented mild isolated skin reactions (one patient despite the premedication). These reactions were hives and itchiness and were managed with oral antihistamines. One patient reacted to placebo with pruritis, sensation of throat closure, and dizziness but following reassurance safely completed the open challenge.
Conclusion: Our results underline the safety of the mRNA COVID-19 booster vaccine in a monitored setting for patients with a previous history of anaphylaxis. Large scale studies are required to better understand the underlying mechanisms of the COVID-19 vaccine reported reactions.

P012

SAFETY OF CEFAZOLIN PERIOPERATIVE PROPHYLAXIS IN PLASTIC SURGERY PATIENTS WITH PENICILLIN ALLERGY

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Introduction: Preoperative antimicrobial prophylaxis, typically with first generation cephalosporin (cefazolin) is crucial in reducing surgical site infections (SSI) in plastic surgery patients. Despite low cross-reactivity with cefazolin, the presence of penicillin allergy (PA) on a patient's chart is known to result in the use of alternative antibiotics and increased risk of SSI in other surgical patients. Our study sought to examine patterns of perioperative antibiotics use and rates of reaction in plastic surgery patients with reported penicillin allergy in our institution, data yet to be investigated in this field.
Methods: This was a six-month, single-center retrospective chart review of adult patients of three body contouring plastic surgeons. Presence of PA, perioperative antibiotic administered, and patient outcomes including incidence of allergic reaction and SSI were recorded.
Results: 457 patients of which 91% (n=416) were female received 479 plastic surgery procedures. PA was listed in 16 (3.5%) patients documented as anaphylaxis, 57 (12.5%) non-anaphylactic hypersensitivity, and 7 (1.5%) unknown reaction. Cephalosporin allergy (CA) was reported in 18 (4%) of patients with 8 (1.7%) reporting both PA and CA. Of patients with PA, 30 (41%) received cefazolin and the rest received either clindamycin or ciprofloxacin. None developed anaphylaxis or a histamine-mediated reaction. 2 patients with PA who received clindamycin and 1 patient with PA who received cefazolin developed SSI. 1 patient with CA who received clindamycin developed SSI.
Conclusion: Cephalosporins remain first line perioperative prophylaxis for appropriate patients with PA. However, plastic surgeons still frequently choose alternative antibiotics, highlighting the need for further education.

P013

GRADED CHALLENGES TO PENICILLIN IN ICU PATIENTS

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Introduction: There is emerging data for safety and efficacy of graded challenges to penicillin (GCP), without penicillin skin testing, in patients with low risk reaction histories. We describe outcomes of GCP in ICU patients.
Methods: From 8/2021 to 6/2022, allergy/immunology physicians completed e-consults for ICU patients with a penicillin allergy label. Low risk history was defined as unknown reaction or a history of a cutaneous-only reaction >5 years ago and was verified by chart review or patient/family contact. GCP consisted of a 2-3 step challenge to amoxicillin or ampicillin. Patient demographics, GCP results, pre/post GCP antibiotics regimens, and a 2-4 week follow up were collected.
Results: There were 40 ICU patients with low-risk reaction histories. Historical reactions included: rash (17, 43%), hives (10, 25%), angioedema (5, 13%), and unknown (8, 20%). The median age was 63.5 years (interquartile range: 58.8- 72.3). Patient characteristics included: 24/40 patients (60%) intubated, 12/40 (30%) receiving steroids, 10/40 (25%) COVID-19+, 8/40 (20%) receiving vasopressors, 7/40 (18%) on antihistamines, and 1/40 (3%) on ECMO. A total of 32/40 (80%) patients underwent GCP. There was a negative GCP in 31/32 (97%) patients; one patient developed self-limited abdominal pain. Twelve of 32 (38%) patients transitioned to penicillins: from cephalosporins (10/12), vancomycin (3/12), metronidazole (1/12), meropenem (1/12), macrolide (1/12). There were 15/40 (37.5%) deaths at 2-4 weeks follow up.
Conclusions: : GCP was safe and efficacious in critically ill ICU patients with low risk reaction histories. Given the high ICU mortality, patients should be carefully identified for GCP.

P014

CHARACTERIZING ANAPHYLAXIS IN INFANTS PRESENTING TO THE EMERGENCY DEPARTMENT

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