

LOCAL PRESENTATION OF HONEY BEE STING HYPER-REACTIVITY.

Shail*, S. Ho, R.S. Mehta, Galveston, TX.

Introduction: A bee sting can result in a myriad of manifestations ranging from a localized cutaneous response to unusual delayed reactions. Here we describe the case of a 15 year old boy who developed bloody diarrhea 72 hours following a honey bee sting. To the best of our knowledge this is the first such report of gastrointestinal manifestation. **Case Report:** A 15 year old male presented for pre-operative evaluation of allergy to honey bee. He stated that on 2 occasions he was stung by a bee resulting in localized swelling of affected area, nausea, vomit, and abdominal pain after the sting, then bloody diarrhea approximately 72 hours after. The most recent episode was 1 week prior to clinic visit when he was stung by a bee on his toe, following which he had a local reaction. 3 days later he had abdominal pain and loose stools with blood. Physical examination revealed a well healed puncture mark on his toe. His vitals were normal. CBC, ESR, CMP and a stool culture were unremarkable. Skin prick tests were positive for honey bees. Intradermal testing at lowest concentration (1:1000) was positive for all other Hymenoptera (wasp, yellow jacket, hornet), and negative for saline. Immunocap showed positivity to all Hymenoptera. **Discussion:** Delayed gastrointestinal hemorrhage is an unusual manifestation after sting by a honey bee that cannot be explained by IgE-mediated reactions. We postulate that this response could be due to a delayed type I hypersensitivity leading to deposition of immune complexes in the basement membrane of small blood vessels causing vasculitis. This may explain the manifestation of bloody diarrhea 72 hours after the sting. It is also possible that the etiology of this unusual reaction may not be immunologically mediated and may be due to a direct cytotoxic effect of honey bee venom component Melittin on gastrointestinal tissue. Melittin is known to cause cell membrane cleavage and the release of Bradykinin which are both associated with vasodilation. Studies indicate that Melittin and Phospholipase A2 can decrease smooth muscle contractility and thus potentially induce hemorrhage. **Conclusion:** We report an unusual and rare case of bee sting induced bloody diarrhea in an adolescent which was reproducible on two different occasions. We hypothesize that this could be due to a delayed hypersensitivity reaction or a direct cytotoxic effect of bee venom.

MILK ALLERGY IN SHORT BOWEL SYNDROME.

Antoni, A. Fiocchi, L. Dahdah*, O. Mazzina, F. Bellucci, T. Capriati, Galveston, TX. (Vatican City State).

Background: Early, massive exposure to milk allergens is traditionally considered a risk factor for cow's milk allergy (CMA). Epidemiological studies, however, suggest the question whether it can be protective; high milk allergen exposure has also been hypothesized as policy for food allergy prevention. In children with short bowel syndrome (SBS), there has been anecdotally associated with CMA, and several studies have used confirmatory milk challenges. **Methods:** A review of 100 patients followed with short bowel syndrome over a ten-year period at a tertiary pediatric institution. Patients included only the patients who met the following criteria: - Intestinal failure following SBS, defined as dependence on parenteral nutrition providing at least 50% of the total caloric intake for at least three months - Clinical follow-up from surgery to the introduction of a diversified diet including cow's milk proteins. - Absence of other symptoms of CMA underwent a milk-specific IgE sensitization test and a confirmatory oral milk challenge. **Results:** Three infants in a case-series of 100 patients were confirmed with CMA at challenge (see Table). This proportion represents two to ten-folds the incidence of CMA in the general population. **Conclusion:** With its 9.4% incidence, our caseload of SBS carries a two- to tenfold risk of CMA compared to open populations. We hypothesize that a low digestive capacity may play a role in the high incidence of food allergy in children. As their peptic digestion is not complete over their life, protein remnants of the diet could act as allergens. If the overexposure to milk allergens is among the causes of CMA in these children, our study supports the hypothesis of massive antigen exposure as a strategy for food allergy prevention.

Characteristics of the caseload of infants with SBS

N° of patients	32
Current age	1.25-10 years
M/F	22/10
Gestational age	32-38 weeks
Birth weight	1320-3750 g
N° of intestinal surgery	2-6
Age at the first surgery	1-7 days
Underlying disease from SBS	
- Midgut volvulus	44%
- Multiple intestinal atresias	25%
- Necrotizing enterocolitis	19%
- Gastroschisis	9%
- Mesenteric ischemia	3%
Remaining intestinal length (range)	7-80 cm
ICV+	57%
Residual colon >50%	84%

Table legend. SBS: short bowel syndrome. ICV+: preserved ileo-cecal valve.

3 IMPROVING SURGICAL ANTIBIOTIC OPTIONS WITH PENICILLIN ALLERGY TESTING.

T. Pongdee, A. Thethi*, E. Rodrigues, J. Irizarry Alvarado, Jacksonville, FL.

Background: Resistance to antibiotics is a serious worldwide problem. When antibiotic choices are limited due to resistance, treatment alternatives for resistant infections may have higher toxicity, be more costly, and be less effective, and thus patients with resistant infections have higher morbidity and mortality. Core methods to prevent antibiotic resistance include the appropriate use and choice of antibiotics. **Objective:** To reduce the use of prophylactic vancomycin, levofloxacin, and clindamycin in patients with a history of penicillin allergy undergoing surgery by implementing a new clinical pathway consisting of allergy consultation and penicillin allergy skin testing as part of the pre-operative evaluation clinic visit. **Methods:** The participants in this clinical practice improvement project were patients with a history of penicillin allergy who were scheduled to undergo surgery and referred by the Preoperative Evaluation Clinic team for allergy consultation and penicillin allergy skin testing from August 2012 to August 2013, the first year of this new clinical pathway. The primary outcomes were the percent reductions in the use of prophylactic vancomycin, levofloxacin, and clindamycin in patients with a history of penicillin allergy when compared to historical controls. **Results:** Of the 384 patients with a history of penicillin allergy who underwent allergy consultation and penicillin allergy skin testing, 360 (94%) had negative penicillin allergy skin test results and were given clearance by the allergist to receive penicillin or cephalosporin antibiotics. For patients who had reported penicillin allergy, within six months of implementation of this new clinical pathway, vancomycin use was reduced by 54%, levofloxacin use was reduced by 40%, and clindamycin use was reduced by 22% compared to historical controls. **Conclusions:** Prophylactic use of vancomycin, levofloxacin, and clindamycin in patients with a history of penicillin allergy undergoing surgery can be reduced by allergy consultation and penicillin allergy skin testing during the preoperative evaluation process.

4 A CASE OF NEAR FATAL ANAPHYLAXIS TO ORANGE IN A TODDLER.

S.B. Sindher*, S.P. DaVeiga, Philadelphia, PA.

Introduction: Most fruit allergies manifest as pollen-food allergy syndrome characterized by pruritus and edema of the lips, tongue, palate and throat usually a few minutes after ingestion of the raw fruit. Orange is among fruits that are associated with pollen-food allergy syndrome but rarely causes anaphylaxis. **Methods:** We review the case of a 31-month-old girl who developed severe anaphylaxis after the consumption of one Cutie® orange. **Results:** A 31-month-old female presented in anaphylactic shock to an emergency department (ED). Prior to presentation, she was at a supermarket, ate one Cutie® orange and was playing with the orange peel. Within a few minutes she had bilateral periorbital swelling and vomiting. She was treated with diphenhydramine and epinephrine.

increased transaminases, and arterial hypertonia. Reduction to a daily dose of 100 mg danazol triggered HAE attacks (≥ 1 attack per week). When the patient expressed the wish to switch from danazol to C1-INH, he was trained in intravenous self-infusion and learned how to recognize early symptoms of HAE attacks. Danazol was then reduced stepwise (tapering down over several weeks). During this period, recurrent attacks occurred approximately every 8 days and were successfully treated with self-infusion of human pasteurized nanofiltered C1-INH (pnf-C1-INH, Berinert[®]; CSL Behring, Marburg, Germany). Currently, the patient experiences HAE attacks every 5 days. All attacks are treated successfully with self-infusion of pnfC1-INH. The patient has no side effects and transaminases have returned to normal. Arterial hypertonia is ongoing but is well-controlled with lercanidipine. Conclusions: Self-infusion of pnfC1-INH is an effective and safe alternative for patients with severe HAE who experience side effects or show lack of response to attenuated androgens. Before switching from long-term prophylaxis with danazol to acute treatment with pnfC1-INH, we inform the patient about a possible increase of attack frequency and train the patient in intravenous self-administration techniques. We

TICAL USE OF A REAL WORLD DATA BASE IN CLINICAL PRACTICE.

Milwaukee, WI.

s: Health decision-makers involved with treatment, coverage and costs are increasingly developing policies that seek information derived from "Real World" (RW) data base outcomes. Motivated by these initiatives, we developed a framework to assist health-care decision-makers in using RW clinical data, especially related to treatment, coverage and reimbursement. Methods: Since 2008, a relational database has been developed to complement the EHR by providing clinical decision support that are not currently possible in most certified software. Data sources include spirometry, cNO analysis, impulse oscillometry are comorbidities, medication lists, immunotherapy formularies and injection administration records, smoking history, demographics, quality of life assessments and insurance status. Results: We defined RW clinical information (P4P) for decision-making in day-to-day clinical care that are more practical than low-level paradigms formulated by data collected in conventional controlled trials (RCTs) "evidence-based medicine." We characterized RW data by type of outcome (clinical, economic, and administrative), by hierarchies of evidence (which rank evidence according to the strength of research design), and by type of data source (supplementary data collection alongside RCTs, large simple trials, patient registries, administrative claims database, surveys, and medical records). P4P data base key issues: 1) the importance of RW data; 2) limitations of RW data; 3) data depends on the circumstance; 4) good practices for collecting and reporting RW data; 5) good process in using RW data in coverage and reimbursement decisions; 6) the need to consider costs and benefits of data collection; 7) need for modeling; and 8) the need for continued stakeholder dialogue. Conclusions: Real-world databases are essential for sound coverage and reimbursement decisions. Of greatest utility is our use of clinical data to provide high-level treatment decisions that maximize outcomes. It is critical that policymakers recognize the benefits, limitations, and methodological challenges in using RW data from private practice data bases (P4P), and the need to consider carefully the costs and benefits.

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RECONCILIATION OF HEALTH RECORDS FOLLOWING PENICILLIN ALLERGY TESTING OF HOSPITALIZED PATIENTS.

R. Pratt¹, A. Romanova², J. Greenbaum³, M. Cyr³, *1. Stoney Creek, ON, Canada; 2. Ottawa, ON, Canada; 3. Hamilton, ON, Canada.*

Background: Medication errors are a very common problem, which can lead to a range of sequelae, including disclosure with no harm to a substantial degree of morbidity. As a result, medication reconciliation is being implemented as a formal process in many hospitals. Similarly, inaccurate medication allergy lists can lead to increased cost to the system, unnecessary repeat allergy testing, inappropriate or inferior antibiotics being prescribed on readmission or even allergic reactions. We hypothesized that the majority of inpatients tested for penicillin allergy were not allergic and that this information was not adequately documented in the EMR or communicated to the general practitioner. Methods: We retrospectively reviewed the charts of all inpatients at a teaching hospital that were seen by a consultant allergist over the year of 2012. Data col-

lected included basic demographics, penicillin allergy test results, current allergy status on the EMR, readmission rates, prescribed antibiotics and discharge summary contents. Results: 146 patients were tested for penicillin allergy in 2012. Of these, 144 (98.6%) were not allergic to penicillin. Although orders were written in the charts of 145 (99.3%) patients to update their allergy status after testing, 32 (22.23%) of these patients with negative tests were still listed as allergic to penicillin in the EMR. Only 19 (15.2%) discharge summaries notified family physicians of the allergy testing results and discharge summaries were missing for 25 (20%) patients. Further assessment of 50% of the charts revealed that in 41% of cases the negative allergy test resulted in a change of antibiotics to penicillin or its derivative. Of the 60 readmitted patients, 20 (33%) were still listed as allergic to penicillin in the EMR (only one patient tested positive on skin testing) and 14 (70%) of the 20 patients required antibiotics. 12 of the 14 patients (86%) were prescribed antibiotics in the penicillin family despite their positive allergy status. Conclusions: A significant proportion of health records were not amended following antibiotic allergy testing and the patient's new allergy status was not communicated to the majority of general practitioners in the discharge summary. A more efficient and reliable system needs to be implemented to ensure changes to allergy status are communicated to all members of the healthcare team.

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USE OF A PRIVATE PRACTICE ALLERGY SPECIALTY HEALTH CARE DATA BASE IN IDENTIFICATION OF PATIENTS THAT MAY BENEFIT FROM NEW THERAPIES.

G. Steven, Greenfield, WI.*

Clinical and demographic data have been entered in a diagnosis-related administrative database (P4P) at AASC since 2008. This database was used to estimate the prevalence of ragweed seasonal allergic rhinitis and to examine the capture of data in P4P, considered in different time frames. Methods: A case-finding algorithm identified patients with a positive skin test to ragweed among those who had had skin testing done since 1996 and healthcare contact at AASC within the last six years for whom we had current and correct contact information. Prevalence rates were calculated as the ratio of the number of identified patients to the total number of allergic rhinitis patients tested. Results: Of the 6877 skin test records in the database, 534 patients were identified who had at least a moderate SPT to short ragweed (approximately an 8mm wheal or greater), had a diagnosis of allergic rhinitis, were not already on SCIT, had a current email address on file and, based on the prescribing information of the recently approved sublingual ragweed extract tablet, were between the ages of 18 and 65. Only 42 of these patients called in to request more information about this new treatment option. Since this medication had been only recently approved, we found lack of formulary coverage to be a significant obstacle to getting patients treated with this new therapy. Nonetheless, although there was only about 2 weeks' time between the drug appearing in pharmacies and the last day to start therapy this year (12 weeks prior to the start of the RW season, per the package insert), we were able to initiate treatment with 12 patients. Conclusions: Clinical and administrative healthcare databases in private practice today can be important tools in identifying populations that may benefit from new therapies, notifying patients of new information (e.g., boxed warnings) regarding medications they are currently taking, as well as identify potentially eligible patients for clinical research trials as part of the drug development process. However, data collection needs to be judicious, relevant and used on a daily basis in order to have a positive impact on clinical care.

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ALLERGIC DISEASES AND CORRELATED RISK FACTORS IN PRESCHOOL CHILDREN.

M. Duse*, G. Forastiere, D. Porta, T. Melengu, A. Di Coste, L. Indinnimeo, *Rome, Italy.*

Background: Allergic diseases affect 40% of the population with an increasing prevalence. In the SIDRIA study, prevalence of allergic diseases changed with the age: asthma and rhinitis raised (respectively from 9.3% to 10.3% and 12.3% to 20.9%), while eczema decreased (from 15.9% to 11.9%). However, data on younger children are lacking. The aim of the present study is to assess the prevalence of allergic and respiratory diseases as well as related risk factors in a population of 3 to 5 years old preschool children. Methods: The study includes children attending 4 Nursery Schools in an urban district of Rome. Data on the allergic diseases were collected using standardized questionnaire (SIDRIA-2) and Skin prick tests (SPT) was performed. We investigated the association of atopy, rhinitis, wheezing and asthma with a list of potential deter-