705 Effect of Rescue Inhaler Dose Counters on ER Utilization, Asthma Admissions and Health Care Claims Costs in a Population of Children in Medicaid Managed Care

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RATIONALE: The effect of dose counter on rescue inhalers has not been studied in Medicaid children

METHODS: Claims data for Medicaid HMO children were analyzed for effect of dose counters on ER utilization, hospital admissions and health care costs. Outcomes included hospital admissions/1000, ER visits/1000, health care costs. The potential cost savings from having a dose counter were calculated.

RESULTS: ER visits without dose counter were 149.36 per 1000 and 101.44 per thousand with. Admissions per 1000 without dose counter were 7.91 per 1000 and with 4.36. Admissions were 81.6% higher without dose counter and ER Visits 47.2% higher without dose counter. ER cost per visit without dose counter averaged $792.85 per visit compared to $545.53 with. Cost per hospital admission without was $8778.59 compared to $6854.28 with. ER cost per visit and cost per admission were 45.3% and 28.1% higher. Excess costs associated with absence of a dose counter were $84,670 excess admission costs due to higher cost admissions, $10,882 ER cost for higher cost visits, $216,903 due to a higher number of admissions and $181,667 due to a higher number of ER visits.

CONCLUSIONS: Absence of dose counters in children covered by Medicaid is associated with higher ER visits and hospital admission, higher cost per admission and ER visit and higher overall health care costs due to ER visits and hospital admissions. Absence of a dose counter represents a risk to the life and safety of Medicaid children with asthma as well as wasted health care costs.

706 Clinical, Endoscopic and Histopathological Characteristics of Pediatric Patients with Eosinophilic Digestives Diseases attending the Gastroenterology Department of the National Institute Of Pediatrics in Mexico City

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RATIONALE: Eosinophilic digestive diseases (EDD) are rare disorders characterized by gastrointestinal eosinophilic infiltrates without underlying primary etiology. Its pathogenesis remains unclear, but is suspected to be related to an hypersensitivity reaction given its relation with other allergic disorders and clinical response to steroid therapy. The objective of this study was to describe the clinical and paraclinical profile of pediatris patients with EDD.

METHODS: We conducted a retrospective, observational, transversal and descriptive study, in wich we reviewed every histopathological report of patients who underwent endoscopy and/or colonoscopy in the Gastroenterology department of the National Institute of Pediatrics in Mexico city from 2014 to 2016. EGE was defined by biopsies showing eosinophilic infiltration of at least 20 eosinophils per high power field, according to Talley criteria. Socio-demographic, clinical and treatment data were searched in the clinical files and registered.

RESULTS: EDD was diagnosed in 27 patients, average age was 5±4.6. 72% of patients had evidence of food sensitization (14% IgE mediated and 86% non IgE-mediated): 81% cow's milk allergy, 19% egg allergy and 11% to others. Most frequent symptoms were: pain (50%); regurgitation, vomit and diarrhea (30%); dyschezia, constipation and bleeding (25%). Eosinophilic duodenitis was the most common EDD (59%), followed by eosnophilic esophagitis (26%) and eosinophilic colitis (18.5%); 22% had combined forms of EDD.

CONCLUSIONS: EDD are poor studied entities that may be more frequent that thougt. In our study two thirds of patients had evidence of food allergy. More studies should be adressed in order to better understand this entity.

707 X chromosomal linkage to eosinophilic esophagitis susceptibility

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RATIONALE: Eosinophilic esophagitis (EoE) is a chronic allergic disease with a marked difference in sex distribution; ~65% of patients are male. Prior genome-wide association studies (GWAS) have identified replicated EoE-risk loci but these analyses did not assess non-autosomal genomic loci.

METHODS: We assessed 14,481 subjects with esophageal eosinophilia living in 48 contiguous states and found a male predominance regardless of region (61.4%-66.4%), population density (63.6%-64.8%), or age (59.2%-67.4%) collectively emphasizing consistent sex differences. We performed an association study of the X and Y chromosomes, including the pseudoautosomal region, data in 732 cases and 9288 controls from two independent cohorts. High-depth RNA sequencing and the eosinophil diagnostic panel were used to measure gene expression of 20 biopsies from well-matched male and female children with and without EoE.

RESULTS: We identified a new EoE risk locus at Xq28 associated with increased EoE risk in both males and females and encoding the genes VMA21 and GPR50 ($p_{combined}=2.11x10^{-10}$, Odds Ratio $(OR)_{combined}=1.31$; $p_{male}=2.4x10^{-8}$, $OR_{male}=1.30$ and $p_{female}=0.002$, $OR_{female}=1.35$). Sex-specific analyses of common variants did not reveal non-autosomal genetic variation sufficient to explain the observed male-predominated disease. Gene expression from esophageal biopsies was largely similar across sex with non-statistically significant trends towards sex-dependent expression of some members of the EoE-transcriptome. A subset of 20 genes expressed from the X and Y chromosomes were expressed in a sex-dependent manner (fold-change>2; $p_{corrected}<0.05$).

CONCLUSIONS: Altogether, our work establishes a new EoE risk locus at Xq28 and was unable to identify evidence that male predominance is dictated by non-autosomal genetic variants.