L27 Vancomycin "allergy" labels in the EHR: Defining Epidemiology, Outcomes and Genetic risk  
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RATIONALE: Vancomycin is recognized to be associated with "allergy labels" (VAL) in the electronic health record; however, clinical distribution and knowledge of host predisposition across distinct clinical phenotypes are lacking.

METHODS: BioVu, a DNA Biobank paired with a deidentified EHR (1996-2020) was used to review VAL. We included subjects with multi-ethnicity genotyping array (MegaEx) typing with HLA ABC DR DQ DP imputed by SNP2HLA. We interrogated specific VAL phenotypes for HLA associations, concurrent allergy labels, and outcomes compared with age, sex, race and disease matched vancomycin tolerant controls (conditional logistical analyses, R version 4.0.3) Bonferroni controlled for multiple comparisons. Where VAL phenotype sample size >100, we performed MegaEx genome wide association studies (GWAS).

RESULTS: 1020/30 76236 (0.33%) BioVu MegaEx VAL patients were identified (non-IgE mediated reactions (Redman) type reactions (42%), nephrotoxicity (6.2%) cytopenias, and potential hypersensitivity reactions (15.7%). Those with Redman-type reactions were younger 40 IQR[23, 61] vs. 55 IQR [40, 67], p<0.0005. HLA-A*32:01, previously associated with vancomycin DRESS, was equally represented across the entire VAL group (67/1017 (6.59%) and BioVu MegaEx population 5634/94179 (5.98%), but was less common in VAL nephrotoxicity group (1/42 (2.38%), driven by higher prevalence of African Americans in vancomycin-piperacillin tazobactam nephrotoxicity group (4/77 (5.2%) vs. 12/587 (2.0%) European-Americans, p=0.08). Cluster and network analyses from HLA and MegaEx data identified significant phenotype-genotype relationships.

CONCLUSIONS: VAL are complex and heterogeneous clinical phenotypes that can be defined by epidemiological and genetic differences. Non-IgE mediated reactions, the most common, remain a permanent part of the EHR despite their modifiability.

L28 COVID-19-Associated Hospitalization and Outcomes in Patients with Asthma: A Systematic Review and Meta-analysis  
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RATIONALE: It remains unclear if asthma is a risk factor associated with poor outcomes among patients with COVID-19.

METHODS: We performed a comprehensive database search for COVID-19 studies published through October 2, 2020. We included studies with COVID-19-diagnosed patients with and without underlying asthma. Outcomes of interest included need for hospitalization, length of hospitalization, intensive care unit (ICU) admission and death. Meta-analysis was conducted using random-effects method.

RESULTS: A total of 389 studies were identified through database searches. After abstract and full-text screening, 18 observational studies with 76,393 patients were included in the analysis. Of the 18 studies, 17 were retrospective, and 1 was a prospective cohort. The average age was 37.7; 63% were female. Two of the studies specifically evaluated pregnant patients, and two included only pediatric patients. Among patients with COVID-19 infection, the presence of asthma was not associated with significant increased risk of hospitalization (odds ratio (OR) 1.46 [95% confidence interval, 0.29, 7.28]), length of hospitalization (1.59 days [-0.55, 3.74]), ICU admission (OR 1.65 [0.56, 4.17]) or death (OR 0.73 [0.38, 1.40]). The overall risk of bias of the included studies is high.

CONCLUSIONS: Among patients with COVID-19 infection, asthma did not significantly increase the risk of adverse outcomes. The role of type 2 inflammation and inhaled corticosteroid use in this population needs to be further explored.

L29 A Survey of Respiratory Symptoms Reported in Patients Following Hospitalization with COVID-19 Infection  
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RATIONALE: The coronavirus disease 2019 (COVID-19) pandemic has led to a global health emergency. It is an airborne, respiratory infection with multi-systemic involvement, notably in the upper and lower airways. Clinical manifestations range from asymptomatic to respiratory failure requiring advanced airway with mechanical ventilation - and even death. There is limited information about respiratory symptoms after treatment for the disease after hospital discharge.

METHODS: An Institutional Review Board (IRB) approved phone survey was conducted for patients hospitalized and discharged with COVID-19 from a local tertiary center. A list was generated of COVID-19 patients diagnosed by RT-PCR at the same facility March to August 2020. Phone numbers were obtained from patient demographics. Of a list of 232 individuals, 42 patients responded. Average age at diagnosis was 59.2 years (ranging 7 to 87 years). Patients or their caretakers were asked if additional therapy/treatment was needed in addition to a list of symptoms that were caused/worsened by COVID-19 infection within 6 months post-discharge.

RESULTS: 38.1% of patients required some form of additional therapy after discharge. Patients reported: fatigue (52.4%), shortness of breath (47.6%), decreased smell/taste (42.9%), increased mucus production (38.1%), nasal congestion (28.6%), rhinorrhea (28.6%), cough (26.2%), chest tightness (23.8%), sneezing (19.0%), wheezing (16.7%), and sinus pain/pain (11.9%).

CONCLUSIONS: In the 6 months following hospital discharge for a subset of patients with COVID-19 infection, residual shortness of breath and decreased smell/taste, in addition to fatigue and changes in activities of daily living, were more often reported than other respiratory symptoms.