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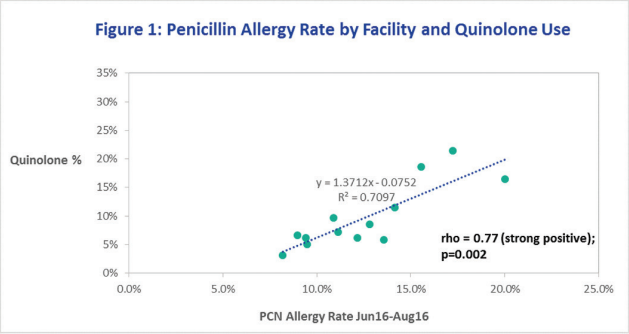
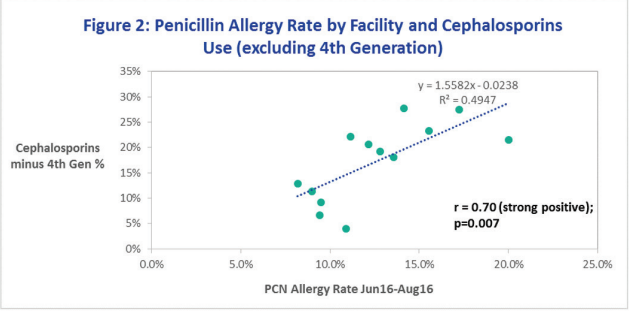
***Background.*** Penicillin allergy is the most common antibiotic allergy noted within medical records, and its inaccurate reporting leads to increased use of alternative antibiotics that may be less effective, broader in spectrum, more toxic, and costly.

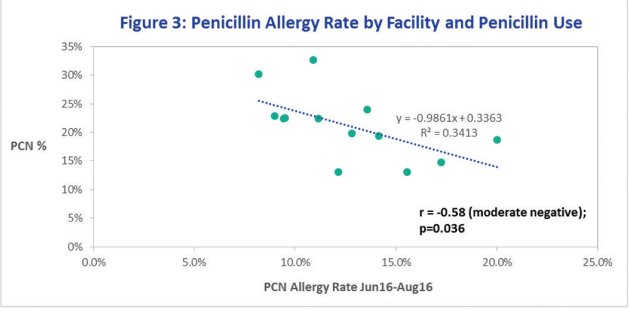
***Methods.*** We retrospectively reviewed the reported allergies to penicillin in patients cared for at 13 hospitals within one health system over a 3 month period (June-August 2016). The data were abstracted from the electronic medical records on penicillin allergy status for both inpatient and outpatient visits. Hospitals were compared on their use of systemic antibiotics for inpatients. The proportions of total defined daily doses (DDD) for quinolones, aztreonam, carbapenems, cephalosporins, and penicillins were compared. Spearman's rank and Pearson's correlation were used to evaluate the strength of the relation between increased penicillin allergy reported and the use of the different antibiotic classes.

***Results.*** 23,290 of 169,912 (13.7%; range 8%–20%) patients from 13 hospitals were reported penicillin allergic. There was a strong correlation between the proportion of patients with penicillin allergy and quinolone use (rho=0.77; $P$ = 0.002; Figure 1), cephalosporins excluding fourth-generation (r=0.70; $P$ = 0.007; Figure 2), and a weaker correlation with carbapenem use (rho=0.52; $P$ = 0.168) and aztreonam (r=0.53; $P$ = 0.06). On the other hand, penicillins had a moderate negative correlation (r=-0.58; $P$ = 0.036; Figure 3), and extended spectrum penicillins had a strong negative correlation (r=-0.72; $P$ < 0.005). Fourth-generation cephalosporin use did not correlate with the penicillin allergy rate (rho=-0.03; $P$ = 0.92).

***Conclusion.*** Reported penicillin allergy varies between hospitals and higher reported allergy is associated with more quinolone and cephalosporin use, and less use of penicillin-based regimens. Adequate documentation of penicillin allergy may promote the choice of more optimal regimens when treating patients.




***Disclosures.*** **All authors:** No reported disclosures.

**1118. Adverse Events Releated to Antibiotic Use in Patients with Myasthenia Gravis**

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***Background.*** Myasthenia gravis is a medical condition involving the neuromuscular junction, characterized by weakness and fatigue of voluntary muscles. While the understanding of myasthenia gravis has progressed over the years, questions remain regarding which antimicrobial agents can be administered safely to these patients. Traditionally, aminoglycosides and fluoroquinolones have been avoided in this patient population, while other antimicrobials may be prescribed with caution. With minimal literature to guide practice, our aim was to review antimicrobial prescribing in patients with myasthenia gravis at our institution.

***Methods.*** We conducted a retrospective chart review of adult patients 18 years of age and older with a diagnosis of myasthenia gravis who were admitted from January 2012 through December 2015. Charts were reviewed for the receipt of any antimicrobial during the course of hospitalization and any adverse events related to receipt of antimicrobial agents.

***Results.*** 205 patients with a diagnosis of myasthenia gravis were admitted to our institution during the study period. 132 (64.4 %) patients were female and ages ranged from 20 to 98 with a median age of 59 years. 159 (77.6 %) patients received at least 1 dose of an antimicrobial agent during their hospitalization. It was notable that 12.2 % and 11.7 % of patients received at least 1 dose of ciprofloxacin or levofloxacin, respectively. Additionally, 3.9 % of patients received at least 1 dose of an aminoglycoside (gentamicin or tobramycin). Five patients experienced a worsening of their myasthenia gravis symptoms with antibiotic use; 2 cases involved levofloxacin and 1 case each involved ciprofloxacin, cefazolin, or clindamycin. Of note, the average duration of therapy prior to symptoms being noted was 2.6 days.

***Conclusion.*** This study highlights the wide variation in antimicrobial prescribing for patients with myasthenia gravis. Our chart review identified few adverse reactions exacerbating disease symptoms related to antimicrobial use. As it is still unclear the exact mechanism for the development of reactions in select patients with myasthenia gravis, further research may be needed to elucidate this information.

***Disclosures.*** **All authors:** No reported disclosures.

**1119. Antibiotic Allergies – Is De-labeling Based on Clinical History Feasible?**

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***Background.*** Up to 25% of patients admitted to hospital have an antibiotic allergy label (AAL), most of which are towards penicillin. However, up to 90% of patients who claim to be allergic to penicillin are actually able to tolerate them[1]. Whilst skin testing is safe and efficacious in de-labeling patients with a penicillin allergy label, it is usually not widely available. Therefore, we investigated the feasibility of de-labeling based solely upon clinical grounds. Quality of allergy documentation and subsequent antibiotic use was also assessed.

***Methods.*** This was a cross-sectional study assessing all patients admitted to a tertiary referral teaching hospital over a 5-month period in 2016. All newly admitted patients were prospectively screened for the presence of an antibiotic allergy documented in their electronic medical record. Unless unable to participate, patients were interviewed regarding the detailed nature of their antibiotic allergy. Information regarding allergy documentation, medical condition and antibiotic use was obtained from medical records.

***Results.*** 3855 patients were screened, 553 (14.35%) had an AAL, and 352 were interviewed. There were 426 allergies, 276 (64.8%) towards a penicillin. Only 52% of patients had a convincing history consistent with antibiotic allergy, and 48% of these were mild cutaneous reactions. It was felt that de-labeling and direct re-challenge would be relatively safe in 70% (298/42) of AALs (if the mild cutaneous allergic group were included). In patients who were prescribed antibiotics during study admission, 25.6% (41/160) of antibiotic prescriptions in our cohort were found to be inappropriate in patients with AALs.

***Conclusion.*** Direct re-challenge based upon clinical grounds appears to be a feasible clinical option in many patients with AALs and would allow de-labeling of these patients. The major barriers continue to be patient acceptance and risk of severe adverse reactions. Our study also found that major improvements could be made in the specific documentation of allergy and also in selection of guideline-recommended alternate antibiotics.

1. Joint Task Force on Practice Parameters. Drug Allergy: An Updated Practice Parameter. Ann Allergy Asthma Immunol. 2010; 105(4): p. 259–273.

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**1120. Correlations Between Environmental Factors and Increasing Lyme Disease Incidence in Canada**

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