Do obese subjects have a high prevalence of documented penicillin allergy?

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**RATIONALE**

- Penicillin allergy is the most frequently reported drug allergy.
- While 10% of patients\(^1\) claim to be allergic, only 1% have a true penicillin allergy.
- Penicillin allergy labels are associated with use of broader spectrum antibiotics and increased rates of Clostridium difficile, vancomycin-resistant Enterococcus, and methicillin-resistant Staphylococcus aureus\(^4\).
- Previous literature has also shown increased hospital length of hospital stay and cost in patients with reported penicillin allergy\(^2\).
- Multiple drug allergy has been shown to be of higher incidence in the overweight population\(^3\).
- Epidemiologic data has shown increased risk of atopy and asthma in obesity, speculated to be due to increased IL-6, leptin and TNF alpha, and down-regulation of T-reg cells\(^5\).

**METHODS**

- The 2012-2014 National Inpatient Sample database (NIS) was used to select obese patients. ICD 9 code V14.0 was used to determine the number of obese subjects with history of penicillin allergy. Characteristics of the isolated cases were collected.

**RESULTS**

**OBESE SUBJECTS WITH DOCUMENTED PENICILLIN ALLERGY**

- Documented penicillin allergy
- No penicillin allergy

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<th>Total number of patients with a documented penicillin allergy</th>
<th>96027 (4.2%)</th>
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<td>Significantly less than 10.0% from published reports (p&lt;.001)</td>
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**DISCUSSION**

- To our knowledge, this is the first study evaluating documented penicillin allergy in inpatient obese patients.
- While we anticipated that obese subjects would have a higher prevalence of documented penicillin allergy than the general population, we found the opposite to be true.
- While previous data has shown increased atopy in obesity, it may be that drug allergy is not associated with increased risk of atopy.

**REFERENCES**