Impact of Antibiotic Challenge Dose Testing on Patient Care in a Community Hospital: a Prospective Study

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**INTRODUCTION**
- Penicillin allergy is reported in 10% patients in the U.S.\(^1\)
- Patients with penicillin allergies are treated with broader spectrum antibiotics leading to:
  - More antibiotic-resistant infections, including C. difficile
  - Increased risk of surgical site infections
  - Increased health care costs

**METHODS**
- N= 336 Medicine/Surgical patients with reported penicillin (P) or cephalosporin (C) allergies
- Enrolled from June 2015 to November 2017
- Standardized 2-step antibiotic challenge
  - 10% dose followed by 100% dose.
- Test dose protocol can be safely implemented in a community hospital.
- Despite the frequency with which beta-lactam allergies are reported, few patients had an allergy that interfered with optimal treatment when tested.
- Beta-Lactam Challenge Testing may be a useful tool for Antibiotic Stewardship.
- Test dose protocol can be safely implemented in a community hospital.

**BASELINE DATA**
- 336 patients (53 Medical, 283 Surgical) underwent the antibiotic test dose protocol.
- After formal testing, none had a major adverse reaction
- Before testing, 321/336 (96%) were prescribed broad spectrum antibiotics leading to:
- 50% cost savings per surgical patient
- 3,480 saved per medicine patient
- Total Pharmacy cost savings was $38,281.00
- After testing, the antibiotic spectrum was narrowed in 308/321 (96%).

**RESULTS**
- 336 patients (53 Medical, 283 Surgical) underwent the antibiotic test dose protocol.
- After formal testing, none had a major adverse reaction
- Before testing, 321/336 (96%) were prescribed broad or inappropriate antibiotics.
- After challenge dose testing, the antibiotic spectrum was narrowed in 308/321 (96%).

**CONCLUSIONS**
- Despite the frequency with which beta-lactam allergies are reported, few patients had an allergy that interfered with optimal treatment when tested.
- Beta-Lactam Challenge Testing may be a useful tool for Antibiotic Stewardship.
- Test dose protocol can be safely implemented in a community hospital.

**REFERENCES**
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**ACKNOWLEDGMENTS**