

October 2014

REBEL Cast Shownotes

Topic #1: The use of cephalosporin antibiotics in patients with a history of allergy to penicillin class antibiotics.

Clinical Question: Can we give cephalosporins to patients with a history of penicillin allergy without risking a significant allergic reaction?

OR: Is the classic teaching of a 10% cross-reactivity between cephalosporin and penicillin antibiotics true?

Article:

Campagna JD et al. **The use of cephalosporins in PCN-allergic patients.** JEM 2012; 42(5): 612-20. PMID: [21742459](#)

Background: Allergy to the penicillin class of antibiotics is one of the most commonly documented medication allergies. Often, the details of these allergies are vague. In fact, multiple studies show that < 10% (and likely closer to 3%) of patients who state they have penicillin allergies actually have them (Suresh 1995, Herbert 2000, Apter 2006). This is an issue of concern for medical providers because penicillin class antibiotics are some of the most commonly used antimicrobials with numerous indications. Additionally, we are classically taught that 10% of patients with an allergy to a penicillin will also have an allergy to a cephalosporin and as a result, we should be extremely cautious in prescribing this large class of antibiotics or withhold them completely from these patients. This idea stems from articles published in the 1960's when cross contamination was a significant issue. The veracity of the dogma, however, is questionable.

Details:

- This study is a literature review of studies published from 1950 – 2012 looking at the rate of cross-reactivity.
- 27 articles were found that were relevant to the clinical question.
- The quality of the articles that went into this review was suboptimal. The majority of research papers were non-randomized prospective, non-randomized retrospective and case series designs.
- Patients with documented penicillin allergies were more likely to have an allergic reaction to 1st generation cephalosporins (OR = 4.8 CI 3.7-6.2)
- Patients with documented penicillin allergies were **not** more likely to have an allergic reaction to a 2nd, 3rd or 4th generation cephalosporin (OR = 1.1 CI 0.6 – 2.1)

- True “Cross-Reactivity”
 - 1% in patients with unconfirmed penicillin allergies
 - 2.55% in patients with confirmed allergy

Strengths

- Exhaustive review of the literature that exists.

Weaknesses

- Poor quality of evidence going into the literature review

Clinical Bottom Line: The often quoted 10% “cross-reactivity” rate between penicillins and cephalosporins is inaccurate based on the best available evidence. The true rate is somewhere between 1-3%.

References

Apter AJ et al. Is There Cross-Reactivity Between PCN and Cephalosporins. Am J of Med 2006; 119: 354e11-e20. PMID: [16564780](#)

Campagna JD et al. The use of cephalosporins in PCN-allergic patients. JEM 2012; 42(5): 612-20. PMID: [21742459](#)

Herbert M et al. Medical Myth: 10% of patients who are allergic to PCN will have serious reactions to cephalosporins. W J EM 2000; 172: 5 PMIC: [1070890](#)

Pichichero ME et al. Safe use of Selected Cephalosporins in PCN-allergic Patients – Meta Analysis. Otolaryngology 2007; 136: 340-7 PMID: [17321857](#)

Suresh A. Risk of administering cephalosporin antibiotics to patients with histories of PCN allergy. Ann of Allergy, Asthma and Immunology 1995; 74: 167-70 PMID: [7697478](#)

Topic #2

Article:

Background: