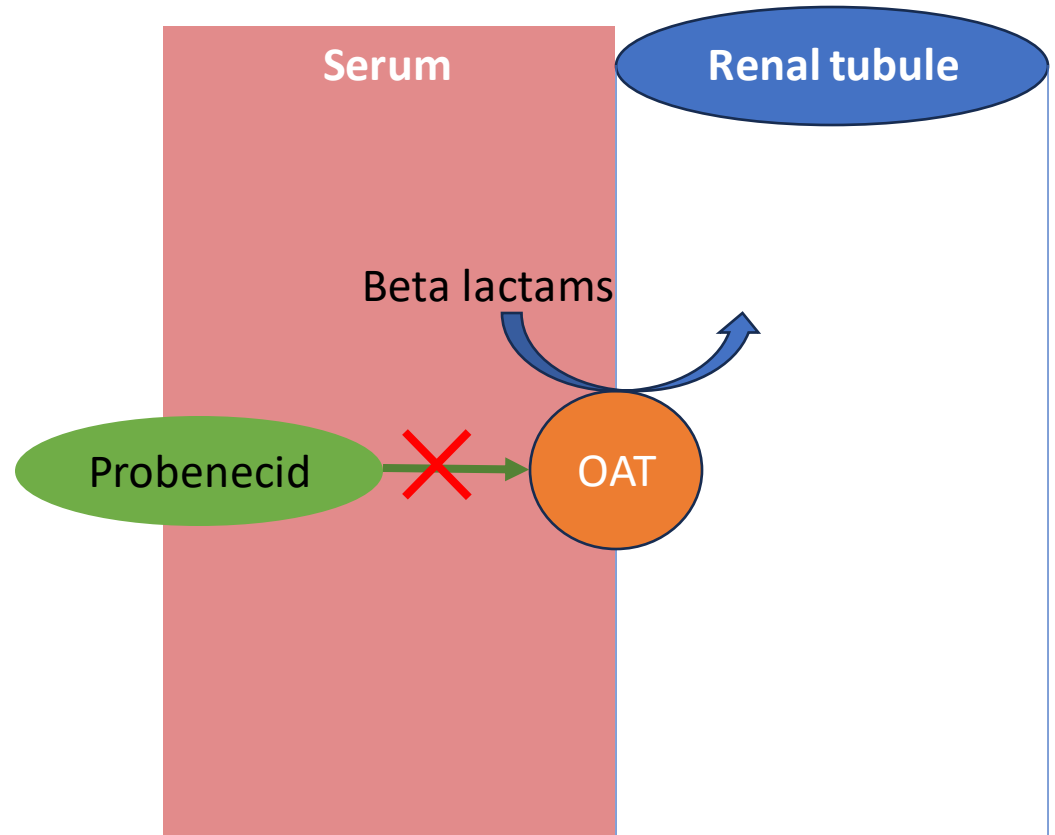


Probenecid rationale

- Inhibit tubular secretion of beta lactams
- Alternative uses: cidofovir nephrotoxicity, gout prevention, STDs




Syphilis

- Pharmacokinetic enhancer to prolong beta lactam serum concentration, and duration of action
- Neurosyphilis: Procaine PCN 2.4mu IM QDaily + Probenecid 500mg po QID x 10-14 days
 - Procaine no longer available
- Benzathine PCN is the gold standard for syphilis but is not widely available in other countries
- Syphilis: Amoxicillin 3gm plus Probenecid 500mg BID x 14-30 days (UK and Japan STI guidelines)



Addition of probenecid to oral β -lactam antibiotics: a systematic review and meta-analysis

Richard C. Wilson^{1,2,3}, Paul Arkell^{2,3}, Alaa Riezk², Mark Gilchrist^{1,2,3}, Graham Wheeler⁴, William Hope⁵,
Alison H. Holmes^{1,2,3} and Timothy M. Rawson ^{1,2,3*}

- Healthy > gonococcal infections > bronchiectasis, biliary, *S aureus*
- Amoxicillin > cephalexin > ampicillin > flucloxacillin, cefuroxime, amox/clav, penicillin
- Single dose studies



Once-Daily Intravenous Cefazolin Plus Oral Probenecid Is Equivalent to Once-Daily Intravenous Ceftriaxone Plus Oral Placebo for the Treatment of Moderate-to-Severe Cellulitis in Adults

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Design: Double blinded RCT

Intervention: Cefazolin 2gm plus Probenecid 1gm QD (n=59) vs. Ceftriaxone 2gm plus Placebo QD (n=57)

Clinical cure: 86% (Cefazolin-Probenecid) vs. 96% (Ceftriaxone-Placebo), p=0.11

Adverse effects: nausea/vomiting more common in Cefazolin-Probenecid arm



Remaining questions

- Is beta lactam exposure achieved with probenecid clinically effective?
- Are there indications outside STDs (gonorrhea, PID, syphilis)?
- Is Probenecid better than newer therapies or dosing strategies?
- What is the optimal dosing strategy of probenecid (QID vs TID)?
- Does probenecid effect non-beta lactam therapies?

