



*June 18th, 2019*

## **Announcements**

- No TASP week of July 4th
- Cases and questions



*June 18th, 2019*

## **Agenda**

- Didactic:

*Antimicrobial Adverse Effects and Toxicities*

- Case Discussions

# A Case

- A 23 year old patient with a complicated meningitis is treated with ceftriaxone. Ten days into therapy, her hematocrit, previously WNL, dropped to 16. Although stable, she was felt exhausted and sleepy.
- 3 units of pRBC were given with minimal improvement in HCT.



# A Question

What was happening to this patient?

- A. Autoimmune hemolytic anemia
- B. Pathogen mediated anemia
- C. Hemorrhage
- D. Iron deficiency
- E. Ceftriaxone-mediated hemolytic anemia



# AAEs - Drugs

- Direct chemical impact on tissues
- Immune-mediated (antigen-antibody)
- Alteration of bacterial flora

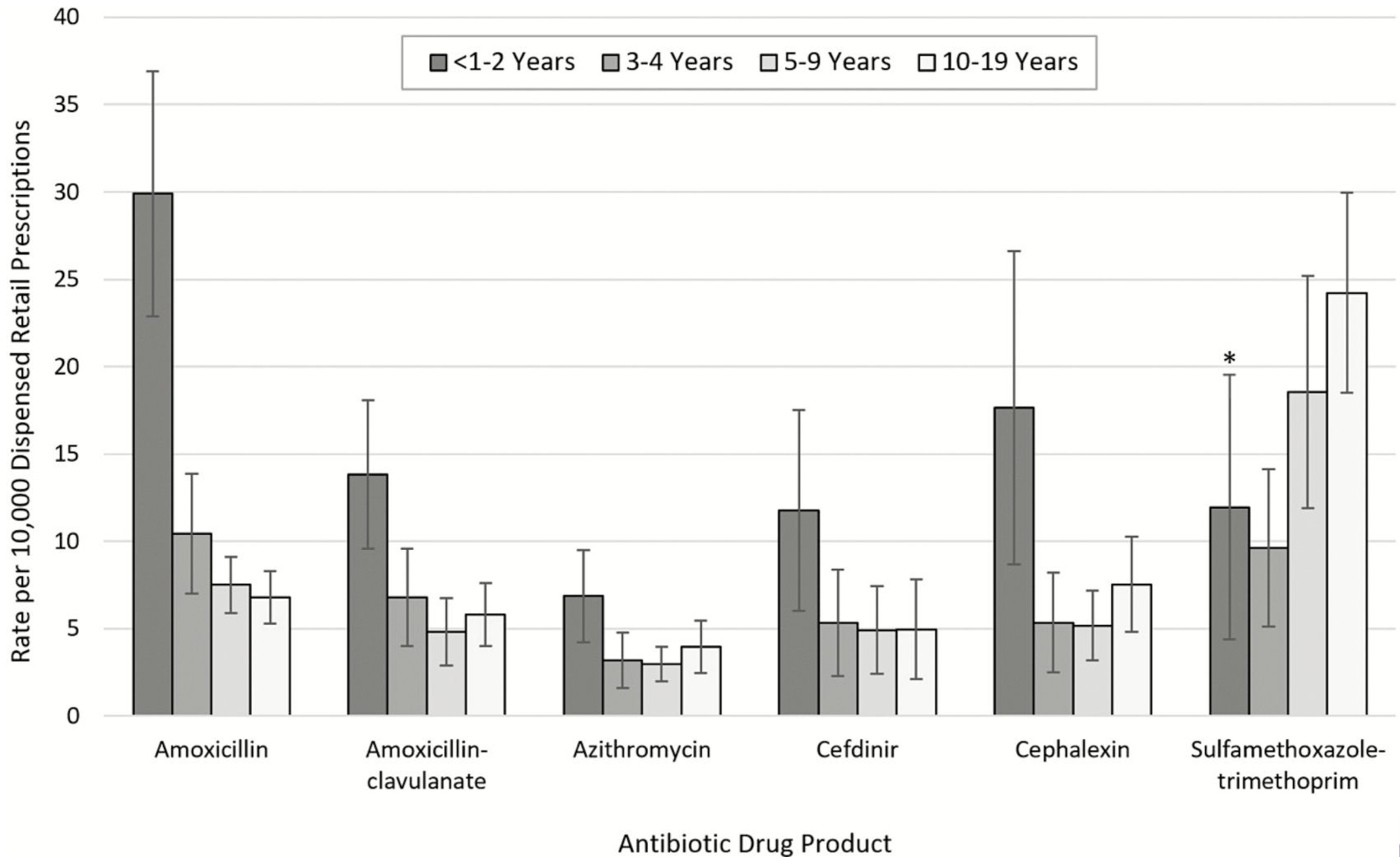


# AAEs - Humans

- Age
- Genetics
- Malnutrition
- Volume status
- Severity of illness
- Organ function (liver, kidneys, vasculature)



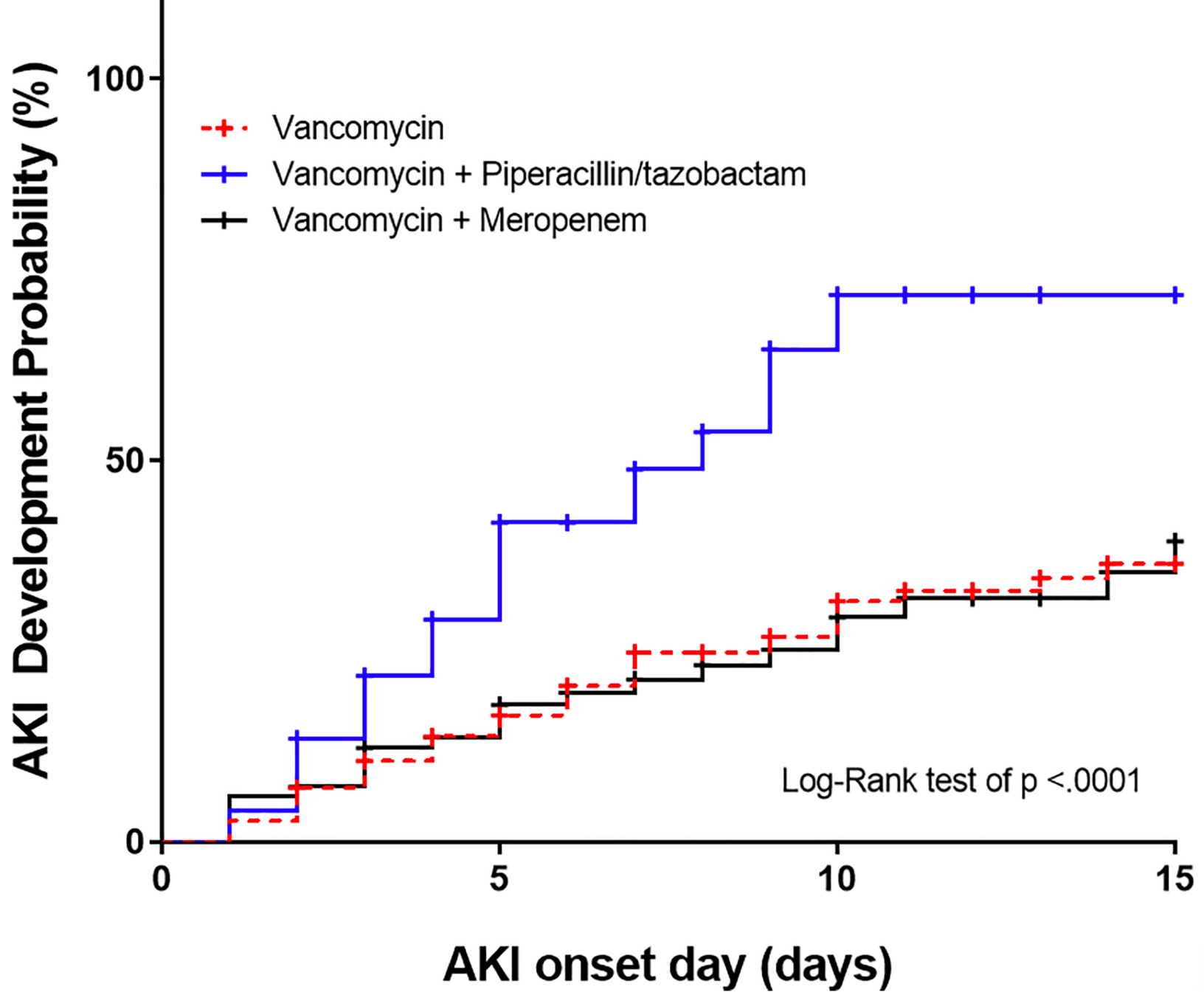
# AAEs and ED Visits - Pediatrics



# AAEs and ED Visits - Adults

- U.S. adults >20 years of age = 145,490 ED visits per year between 2011-2015
- Antibiotics linked to ~14% of all ED visits for adverse drug effects
- Most visits for people <50y and ~72% were females
- Mostly “allergic” reactions
- Most common drugs: PO sulfonamides, penicillins, and fluoroquinolones

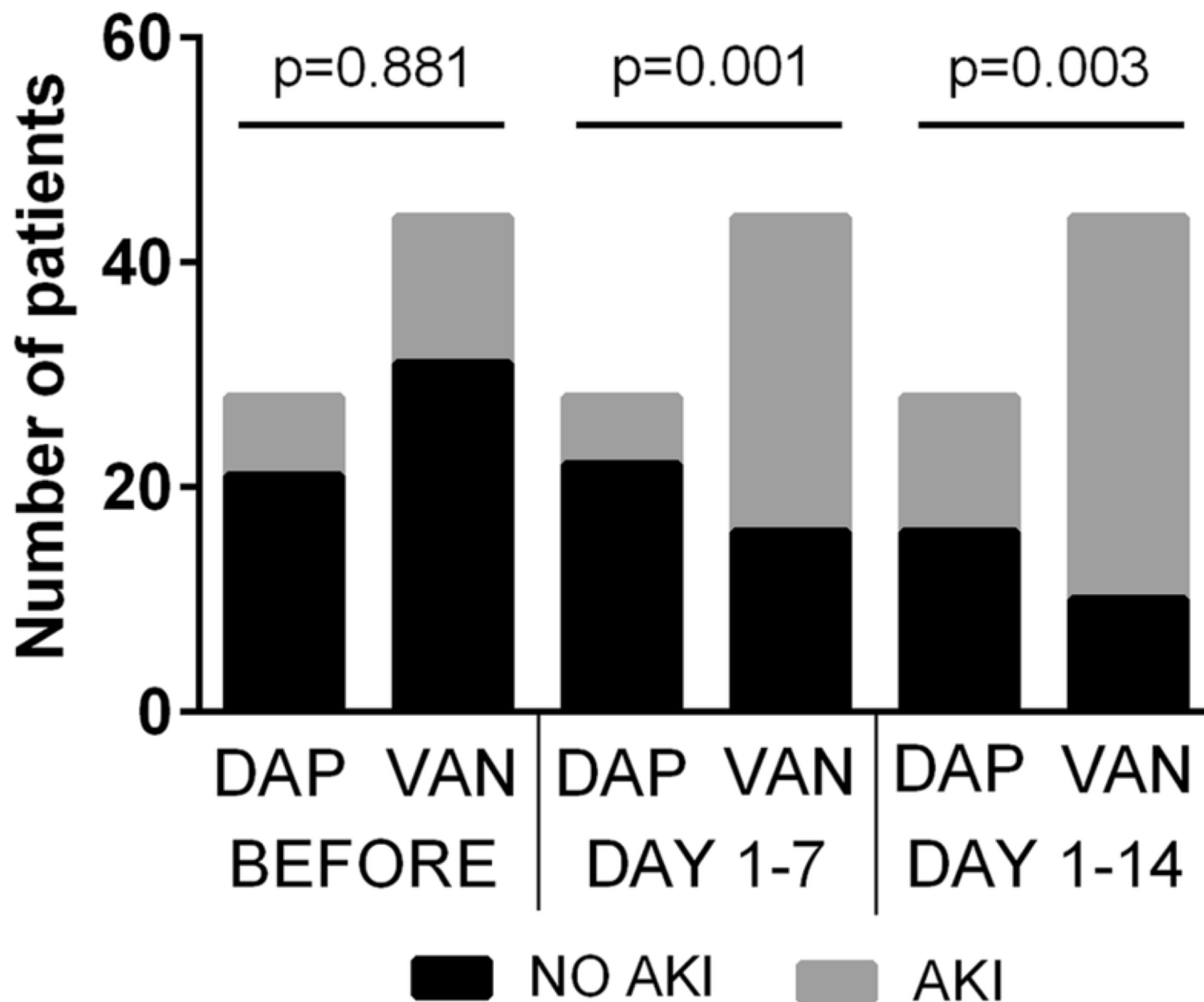




# Vancomycin

- Histamine-mediated flushing
- Nephrotoxicity
- Ototoxicity
- Linear IgA bullous dermatosis

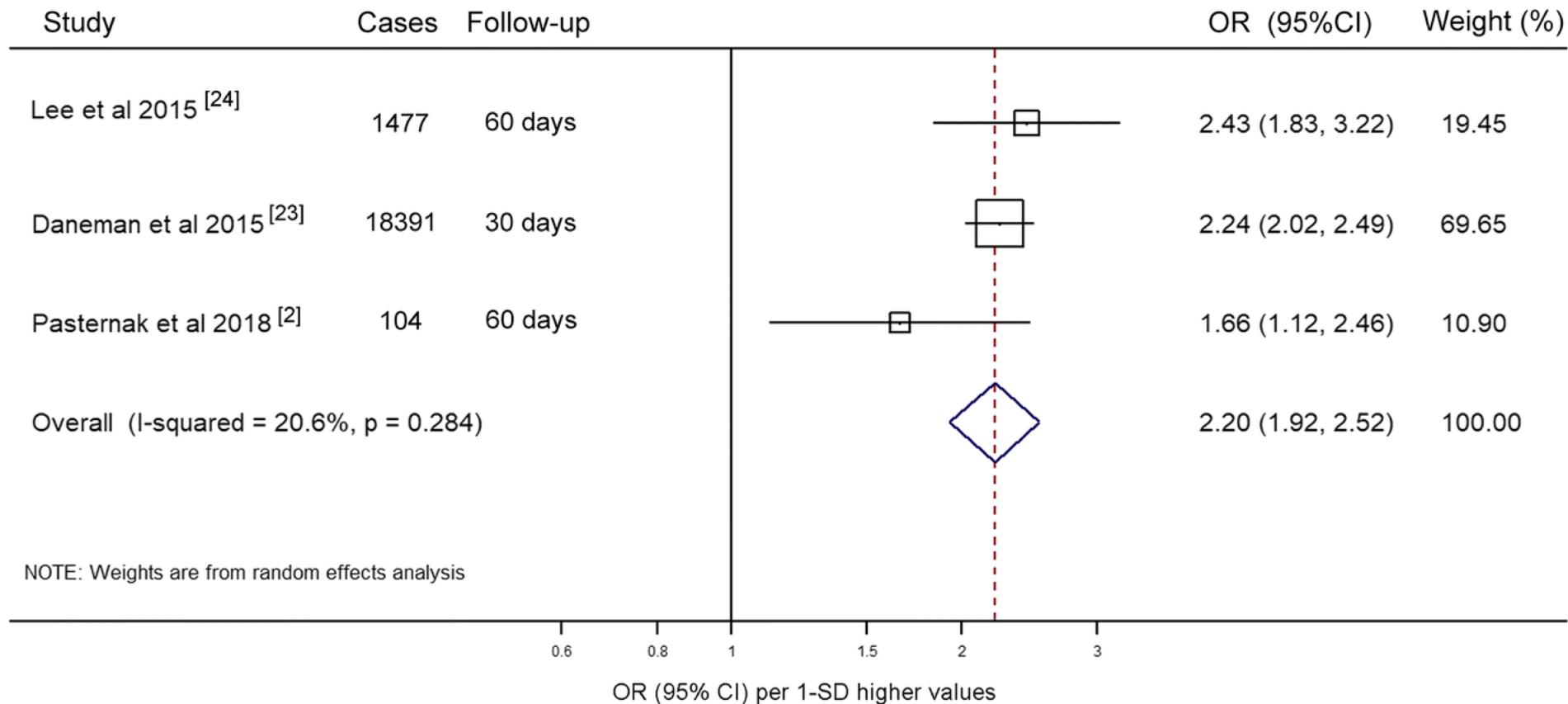






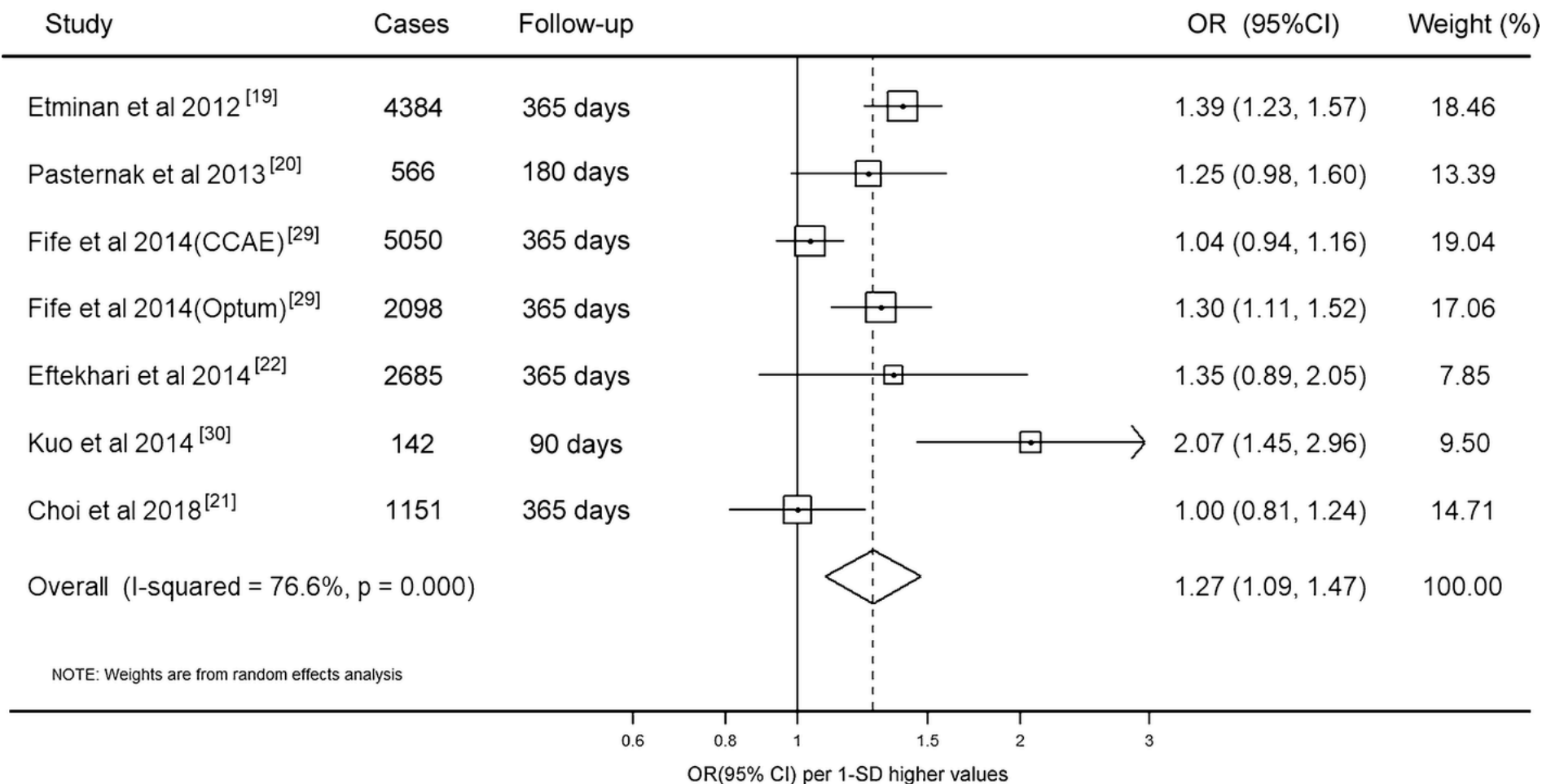
# FluoroquinoDON'TS

## Fluoroquinolones use and aortic dissection or aortic aneurysm



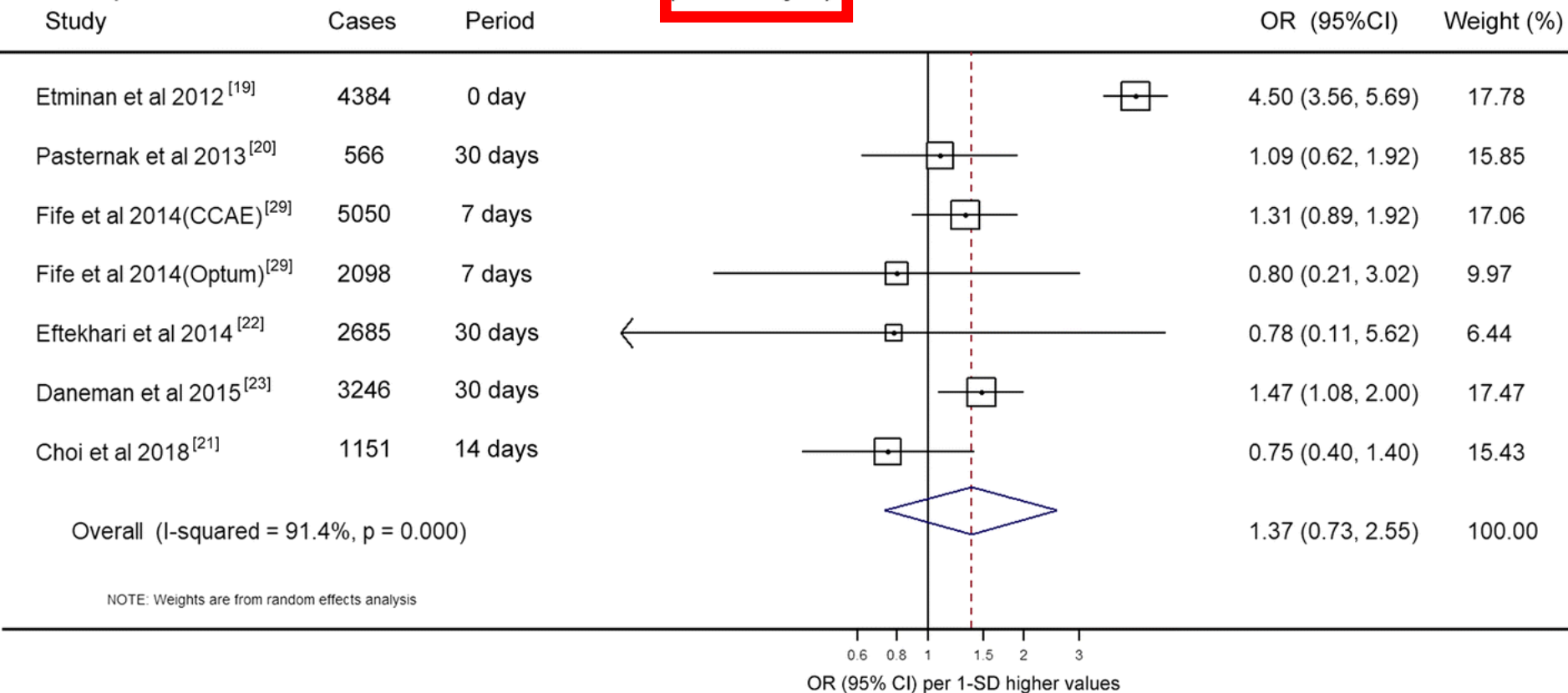
# FluoroquinoDON'TS

Fluoroquinolones use and retinal detachment ( >30days and ≤365 days )



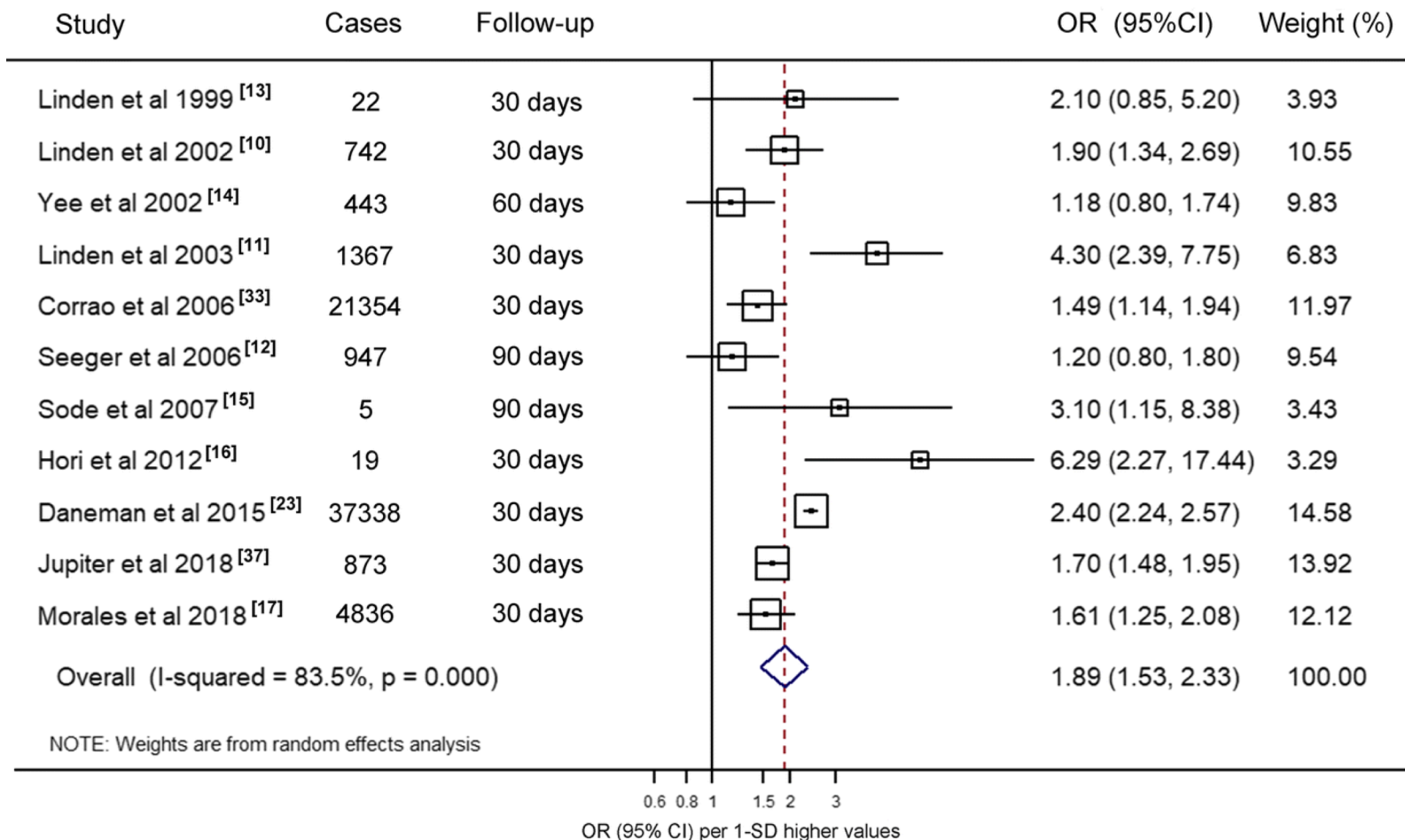
# FluoroquinoDON'TS

## Fluoroquinolones use and retinal detachment ( ≤30 days )



# FluoroquinoDON'TS

## Fluoroquinolones use and tendon disorders

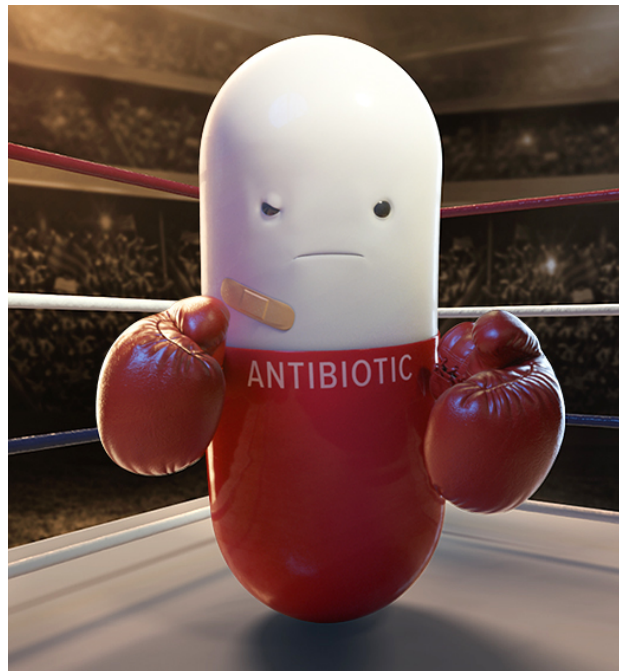


# Other Antimicrobial AEs

- Nitrofurantoin
  - Pulmonary injury (acute and sub-acute)
  - Liver injury
  - Hemolytic anemia
- Daptomycin
  - Eosinophilic pneumonia
  - Rhabdomyolysis/myopathy
- Linezolid
  - Thrombocytopenia/other cytopenias
  - Peripheral neuropathy (usually not reversible)
  - Optic neuropathy



# Like other drugs, antimicrobials can be dangerous!



# Do you have an AE story for the group?

