

Pharmacotherapy Challenges of Treating a Nonagenarian Patient with Bacteraemia Complicated by Haemodialysis and Cephalexin Anaphylaxis

Chin-Yen Yeo¹ & Dr. Winnie Tong²

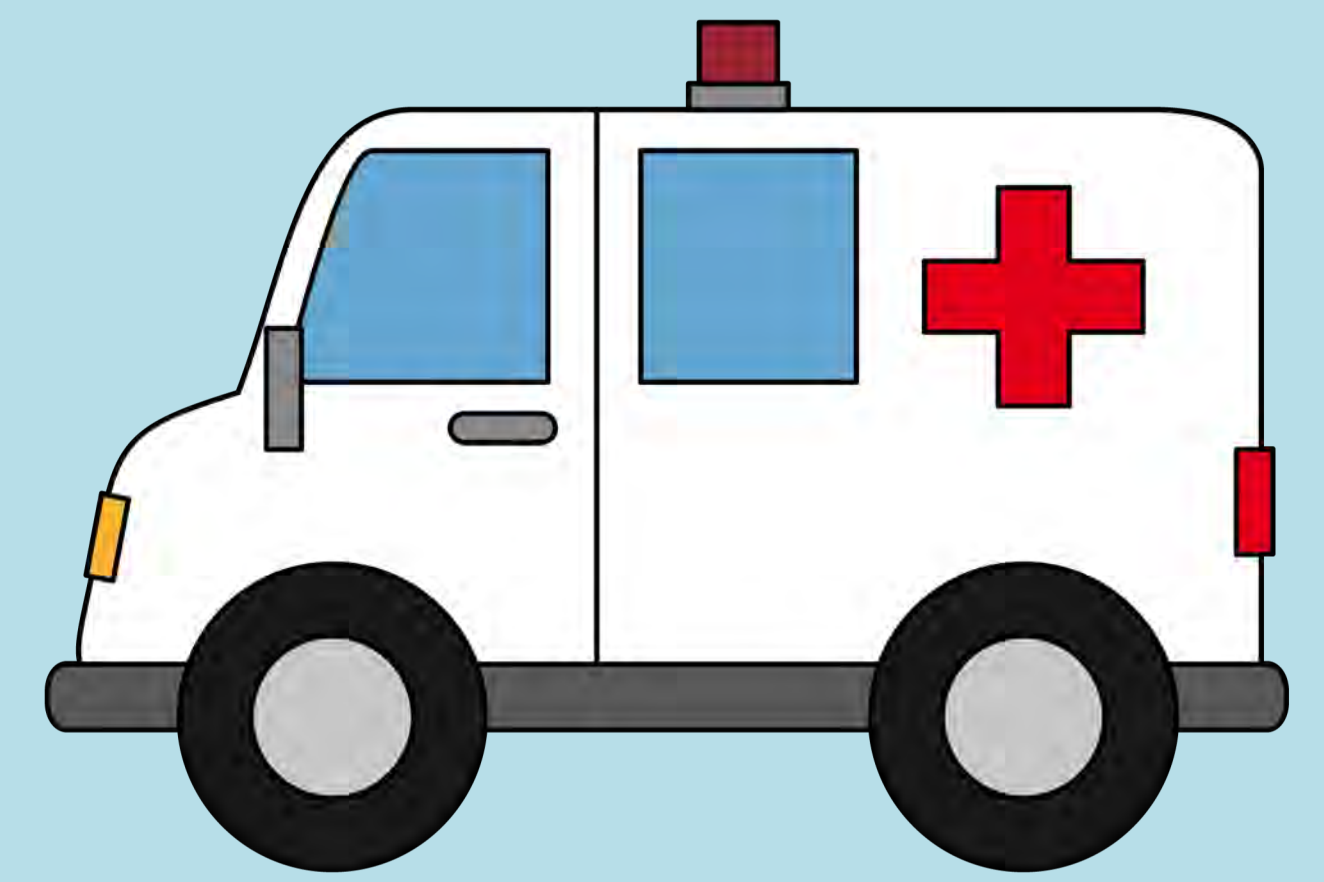
¹Department of Pharmacy, ²Immunology & Infectious Diseases Unit, St Vincent's Hospital Sydney

Contact: chinyen.yeo@health.nsw.gov.au



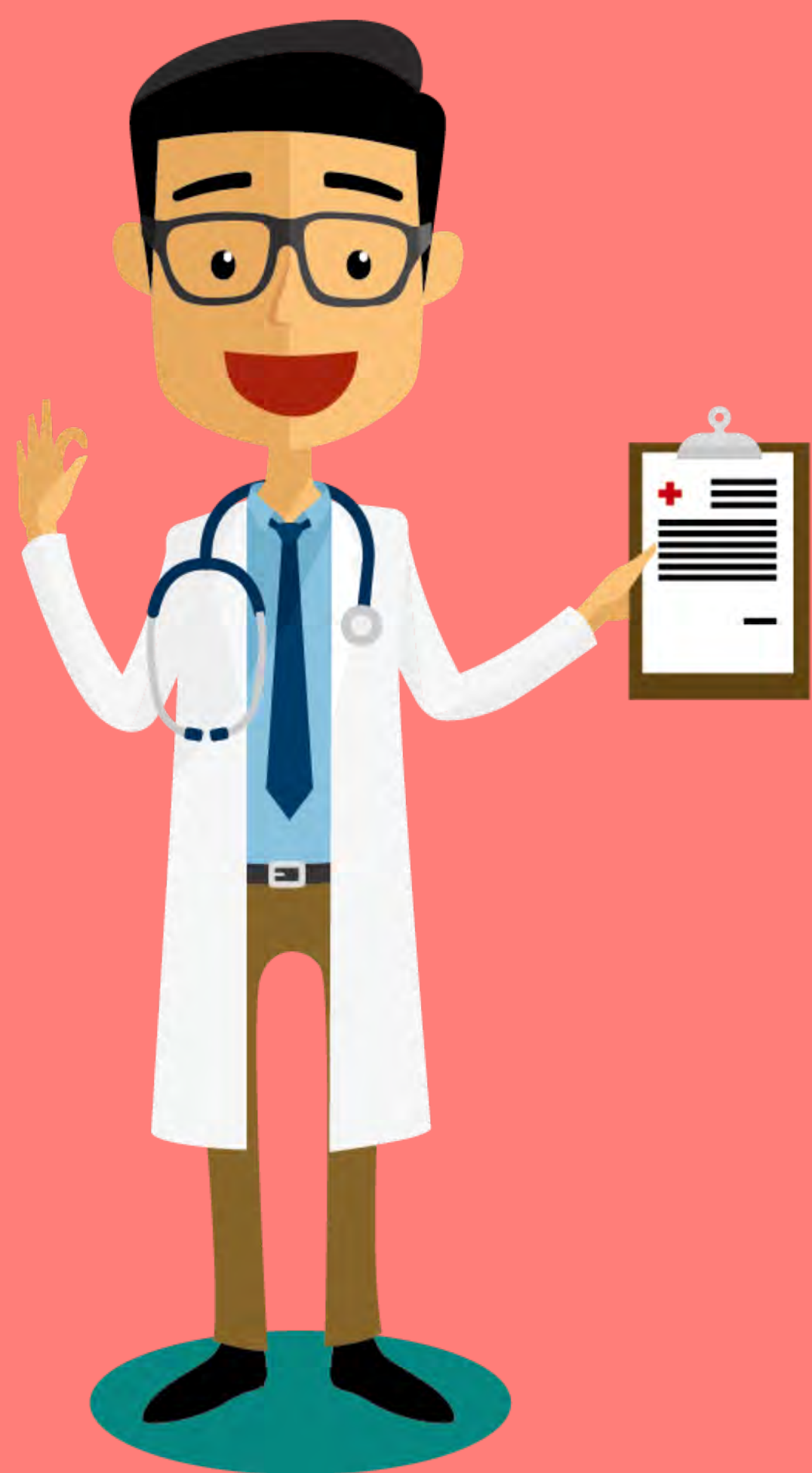
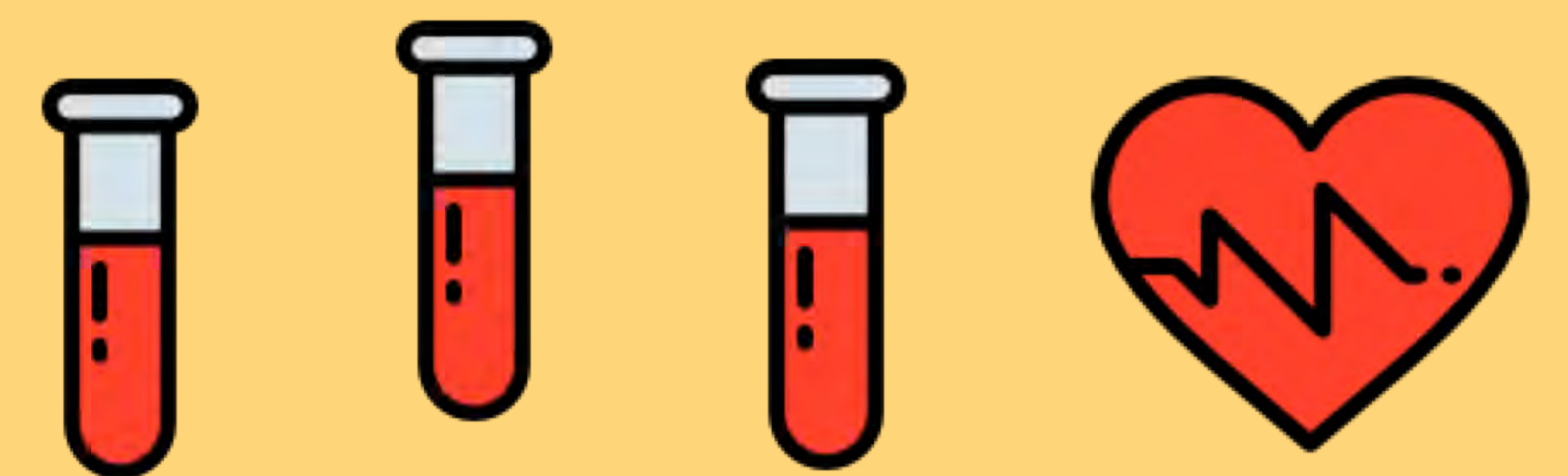
Clinical Features

- 93 year-old male, Caucasian
- End-stage renal disease, receives thrice-weekly haemodialysis
- Presented to hospital following a 5-day history of rigors and fevers
- Upon admission, he was febrile (39°C) and haemodynamically stable
- Medical history: Paroxysmal atrial fibrillation, previous ischaemic stroke (2014) and glaucoma
- Current medications: Warfarin and latanoprost
- Drug Allergy: Cephalexin (Anaphylaxis)



Clinical Investigations & Case Progress

- 3 sets of blood cultures were positive for penicillin-susceptible *Streptococcus oralis* (MIC=0.032µg/mL)
- This was the patient's second *S.oralis* bacteraemia episode within 2 years
- Transesophageal echocardiogram revealed no evidence of infective endocarditis
- The patient was initially treated with thrice-weekly IV vancomycin (post-dialysis), given his previous cephalexin anaphylactoid reaction
- There is a paucity of literature to guide targeted vancomycin monitoring and precision treatment of non-MRSA gram positive infections
- A decision was made to treat the patient with IV benzylpenicillin following desensitisation, owing to its clinical superiority and to prevent recurrence of *S.oralis* bacteraemia
- There is no published safety data on penicillin desensitisation in nonagenarian patients



Pharmacist Interventions & Clinical Outcomes

- The pharmacist, in collaboration with the immunology staff specialist and allergy clinic nurse consultant, designed a comprehensive step-rate cumulative dose desensitisation protocol adapted from the Antibiotic Therapeutic Guidelines
- The pharmacist calculated the appropriate dilutions of benzylpenicillin and assisted in the electronic charting of the step-rate protocol
- After successfully undergoing desensitisation with no complications, the patient completed a 10-day course of IV benzylpenicillin 1.2g 6-hourly, followed by lifelong oral phenoxymethylpenicillin antibiotic therapy of 500mg 12-hourly
- The patient was educated regarding the importance of post-dialysis antibiotic dosing and treatment adherence to maintain a desensitised state

Conclusion

This case report illustrates the safety and efficacy of desensitisation in a nonagenarian patient when penicillin treatment is considered essential but limited by previous allergies. It has also paved the way for an endorsed IV penicillin desensitisation procedure to be implemented in an inpatient setting at this hospital

