

Patient Safety Bulletin

First do no harm – antimicrobial prescribing in the penicillin allergic patient

What happened and what were the issues/implications?

A patient with sepsis and severe pneumonia was admitted to the intensive care unit. They were prescribed piperacillin-tazobactam, even though there was a documented penicillin allergy in their medical records. The patient was given the piperacillin-tazobactam and subsequently had anaphylaxis. They were treated for this and survived both anaphylaxis and sepsis.

The team had not discussed the patient with an infection specialist prior to prescribing the antimicrobial and the antimicrobial prescribed was not in keeping with Trust policy. The main concern was prescribing and administering an antimicrobial containing penicillin despite the patient being documented as having anaphylaxis to penicillin.

With the rise of antimicrobial resistance (AMR), there is increasing frequency of use of broad-spectrum antimicrobials. These may contain active agents to which patients are allergic. Prescribers may not recognise this fact, especially when they use brand names when prescribing rather than generic names. This increases the risk of inappropriate prescribing in patients with drug allergies.

What actions were taken?

As this was deemed to be a serious incident, it was reported as such and a multidisciplinary team (MDT) meeting was held. I attended in my capacity as Trust Sepsis Lead and Infection Prevention and Control Doctor. The following four key issues were found:

- the allergy status of the patient prior to prescribing antimicrobials was not checked
- lack of understanding that piperacillin-tazobactam is a penicillin-containing drug when prescribing it
- not checking that the prescribed antimicrobial was safe to give the patient prior to administration
- using a brand name rather than the generic name piperacillin-tazobactam when prescribing.

What did you learn?

I had written a Trust policy on penicillin allergy several years earlier. As an appendix, this had contained a chart using a traffic light system for commonly prescribed antimicrobials based on their safe prescribing in penicillin allergy, e.g. antimicrobials in the red light contain penicillin. The generic and common brand names were included. Even though this had been uploaded onto the Trust website, it had not been widely publicised and many clinicians were not aware of it.

I learnt that it is not enough to assume people will read policies; they have to be shared in a way that attracts the attention of the relevant stakeholders. There was not enough space on the drug Kardex to write the nature of the allergy or even more than one drug that the patient might be allergic to. Considering that we still used paper medical records, the drug Kardex was the most important place to record any allergies as clinicians tend not to go back through notes to find out allergy status.

However, I also learnt how important it is to de-label patients who are not penicillin allergic – less than 10% labelled as allergic to penicillin actually have an allergy. Often, they self-report as allergic when they just have mild side effects, e.g. nausea or diarrhoea. Subsequently, I now teach on taking an appropriate history of allergy, including the nature of allergy, with de-labelling if the patient is not deemed to be allergic, as per our Trust policy.

How was the learning shared?

We made a patient safety notice about the incident and introduced the traffic light poster, which was laminated and placed on all drug cabinets and trolleys, as well as the sepsis trolley. An electronic means of capturing penicillin allergy status was created, as well as the drug chart being redesigned to indicate the nature of allergy, not just the name of the drug. This was shared at junior doctors' teaching, the nursing board and was disseminated to ward teams.

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