Drug allergy and potentially inappropriate medication in hospitalised patients

E. Pfister[1], E. Oenem[2], V. Del Testa[1], S. Mayer[1], U. Krötsch[1], C. Sickau[1], K. Dahse[1]
[1]Johannes-Apotheke, Gröbenzell, Germany
[2]ISAR Klinikum, Munich, Germany

Background and Objective

Drug allergies are one of the most serious manifestations of allergic diseases. The epidemiology of drug allergies varies but is often quoted to be at 15% of all hospitalised patients [1]. The objective of this work is to record the prevalence of drug allergies in one hospital of primary health care and to minimise drug allergy related problems.

Setting and Method

During a first period of 3 months (Dec 2016–Feb 2017, one day/month) the prevalence of drug allergies and the documentation quality in 433 patients on seven normal wards at ISAR Klinikum in Munich were examined.

Subsequently the process of drug anamnesis was improved by recording drug allergies at the time of in-patient admission by a skilled pharmacy technician. Further the documentation of drug allergies in the electronic prescription system (V-Mobile) is routinely updated twice weekly and interdisciplinarily discussed.

The success of these activities were measured during a second period of 3 months (Jul–Sept 2017, one day/month) in 462 patients.

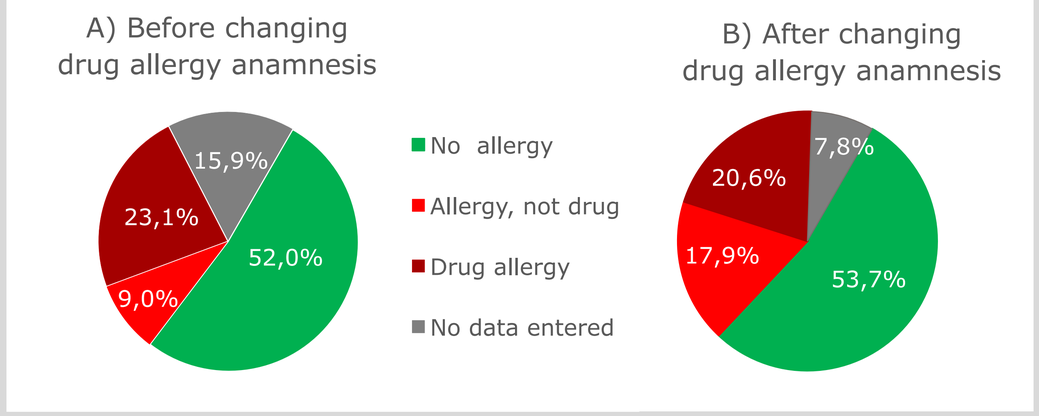

Figure 1: Color codes of the allergy fields before (A) and after (B) changing drug allergy anamnesis.

Table 1: The five most frequent drug allergies recorded for all 895 patients.

1. Penicillin	26
2. Diclofenac	20
3. Metamizol	16
4. Amoxicillin	11
4. Ibuprofen	11

Main outcome measures

The color codes of the allergy fields of all patients were recorded as noted in the electronic prescription system

- Green = no allergy
- Grey = no data entered
- Red = allergy

If no data were entered, the patient's chart was examined for untransferred allergies.

Medication errors whereby a drug was administered despite being flagged as a drug allergy were recorded. The frequency of the parameters above, before and after establishing the improvements was compared.

Results

Before changing anamnesis procedure, 52.0% of the patients were reported to have no allergies and 32.1% had a known allergy (23.1% drug allergy) entered in the prescription system (most frequent drugs listed in Table 1). For 15.9% of the patients, there was no entry of allergy data (Figure 1). 8 patients with documented drug allergies received a drug they were marked being allergic to (8.0%). Drugs affected were: dexamethasone, sufentanil, nebivolol, piperacillin/tazobactam, metamizole and piritramide and tramadol (twice). In no case adverse drug reactions occurred.

After optimising drug admission and constant updating of allergy data, the documentation quality improved remarkably. In the period in which the efficacy of the new measures was evaluated, 38.5% of all patients had a known allergy (20.6% drug allergy). For 53.7% of the patients no allergy was reported. The rate of undocumented allergies was clearly reduced by 51.1% to a total of 7.8% of all cases (Figure 2). A drug flagged as an allergen was administered to two patients (2.1%; piperacillin/tazobactam and ampicillin). This corresponds to a reduction of almost three quarters (73.7%).

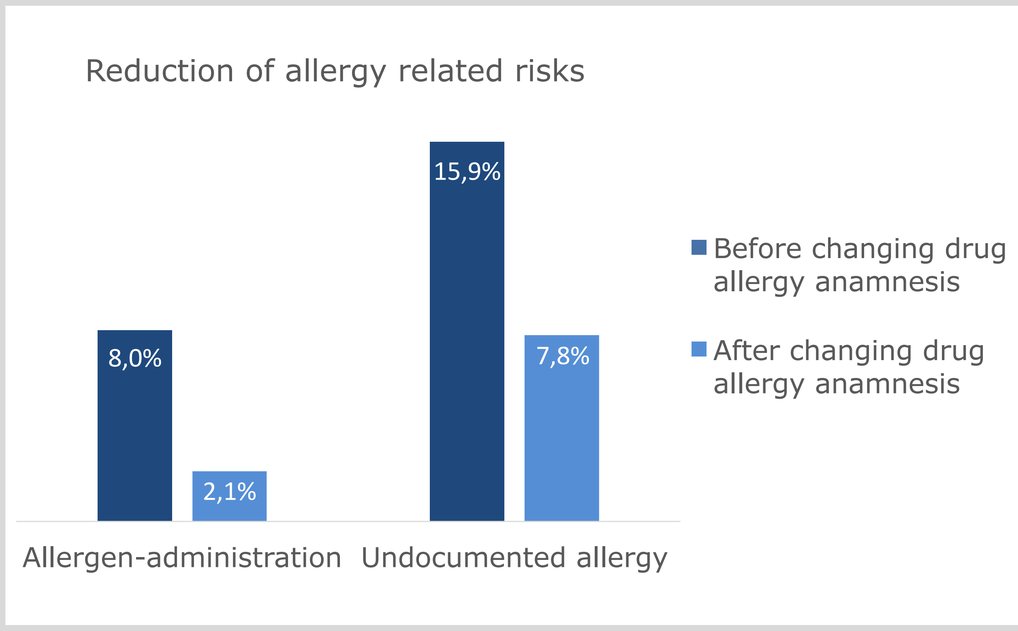

Figure 2. Reduction of allergen-administration (-73.7%) and undocumented allergy (-51.1%) by changing drug allergy anamnesis.

Conclusion

Around 20% of the patients are affected by drug allergies. High sensibility and attention to documentation of allergies and drug administration is necessary. A penicillin allergy is often quoted by patients although at least 75% in fact tolerate ß-lactam antibiotics [2-4], implicating that often there is no true penicillin allergy and therefore more information is required for a clinical decision. Our data show that improving drug anamnesis and documentation hand-in-hand with an increased awareness of allergy related risks leads to

- Improvement of documentation quality
- Prevention of unnecessary treatment with second line antibiotics although there is no allergy to the first line treatment
- Avoiding administration of known allergens to patients.

References
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elisabeth.pfister@johannes-apo.de