

## Drug Allergy and Pharmacy Led Initiatives

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### Abstract

Drug allergy can be caused by any medication which is unlike side effect or drug toxicity. It is most commonly unpredictable and lacks in homogeneity of type and severity from person to person. Due to drug allergy, considerable challenges may arise regarding the delivery of optimal treatment in an allergic individual; therefore, pharmacy-led initiatives can be unpretentiously successful in such situations. If drug allergies are properly documented and identified, then medication errors can be preventable in community pharmacy practice and limitations in the medication-use process can be improved. Health care professionals should also be educated about the weaknesses within existing healthcare practice which may help proposing some promising elucidations in medication-use process.

### Introduction

Any medicine can induce a drug allergy which is an abnormal reaction of immune system to a medication. It is not a drug side effect and is also unlike drug toxicity which is caused by an overdose of a medicine. A drug allergy occurs when the immune system incorrectly detects a drug as harmful and develops an antibody specific to that drug. This may happen on the first time a drug is taken and the allergy may also develop after

there have been frequent exposures to the drug [1]. Drug-induced allergic reaction is most commonly unpredictable and accounts for around 5-10% of the adverse drug reactions [2]. There are different categories of unpredictable drug reactions i.e. drug idiosyncrasy, drug intolerance and pseudo allergic reactions, including drug allergy, but drug allergy mostly arises independent of the dose, observed in selective susceptible persons and is distinct from pharmacologic actions of the drug [3].

The most common signs and symptoms of drug allergy are hives, rash, itching, watery eyes, swelling or fever; it may cause anaphylaxis affecting multiple body systems which is a rare, life-threatening reaction to a drug allergy. Furthermore, for a given drug, there is a lack of homogeneity in the type and severity of allergic symptoms, which may range from mild local discomfort to life-threatening systemic anaphylaxis [1,4].

More commonly associated drugs with allergies include chemotherapy drugs for cancer treatment, pain-relievers (i.e. aspirin, ibuprofen and naproxen sodium), antibiotics (i.e. penicillin), etc. Sometimes a non-allergic drug hypersensitivity reaction or pseudo-allergic drug reaction can create signs and symptoms the same as those of a drug allergy, but those are not triggered by the immune system. Some drugs more commonly produce this condition like aspirin, opiates, local anesthetics, etc. There are a few factors that may increase risk to drug allergy e.g. history of other allergies like with food or hay fever, family history, an increased drug exposure due to prolonged use, high or repetitive doses; certain diseases are also associated with allergic drug reactions like HIV infection [1]. There are many medication cases that involve preventable drug allergies, mostly if patient's allergies were previously documented [5]. It had also been observed that both patients and medical personnel frequently reported incorrectly the non-allergic reactions, i.e. gastrointestinal intolerance or other adverse effects, as allergy [6]. Therefore, it is necessary to identify the ways during the course of the medication-use process in which errors might occur, so that system vulnerabilities could be recognized and thus improved [7].

## Discussion

When a patient is labelled as "allergic" to a medicine, considerable challenges may arise regarding the delivery of optimal treatment as the alternative treatments may not be much effective, leading to extended hospitalization, undesirable adverse effects and greater cost. It is to be considered that due to inadequate drug allergy documentation, such drugs might be prescribed for administration; it is also probable that the right drugs might not be prescribed due to an unnecessary fear of adverse reactions. Interventional trials can be designed for improvement in the completeness of documentation of patients' drug allergies. The main tactics for improved documentation of such reactions has been a bimodal classification of "allergies" as either true allergy or intolerance. It has been observed that even when allergic reactions are documented in patients' history, the reaction is often not noted [6].

A pharmacy-led initiative can be modestly successful in improving the completeness of drug allergy/intolerance documentation. Pharmacists may have access to historical drug allergy information from the patient profile in the database. The list of medicines and reactions must be reconciled and then communicated to the provider to impact prescribing [6].

Computerized physician order entry (CPOE), electronic medical record (EMR) system and decision support are favourable tools for drug allergy clarification. A pharmacist may help in improvement of pharmacy computer system functionality for allergy findings by: ensuring that inactive ingredients of treatment were included in the database; and by having dialogue with the patient and/or the caregiver for detection of likely errors e.g. as an extra check afore medication provision, ask the patient about drug allergy [6,7]. A Community Pharmacy Incident Reporting (CPhIR) Program (available at <http://www.cphir.ca>) has been developed for community pharmacies through which invaluable information is collected to detect system-based susceptible capacities, to improve safe use of medication [5,7,8].

## Conclusion

Medication events relating documented drug allergies are continuous basis of preventable errors in community pharmacy practice and the pharmacists can improve limitations in the medication-use process. The best prevention to evade drug allergy is avoidance of problem drug by informing healthcare team and wearing of a bracelet identifying drug allergy of patient, ensuring proper management in case of emergency. The health care professionals should be educated about the weaknesses within current healthcare process and hence may propose some promising solutions in healthcare settings.

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