OPEN ACCESS Freely available online

ISSN: 2167-1052
Advances in Pharmacoepidemiology and Drug Safety

Perspective

Preventing Adverse Drug Reactions after Hospital Discharge

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DESCRIPTION

Adverse Drug Reactions (ADRs) are much more common than we might think. ADR is estimated to be the fourth leading cause of death in the United States and Canada, after heart disease, cancer and stroke. Additionally, ADR is estimated to be the sixth leading cause of death worldwide. A recent meta-analysis of prospective ADR studies estimated that in 2008, more than 180,000 Americans would die from his ADR and more than 1 million would be injured. Although these data are controversial and do not allow us to estimate the actual incidence of ADR, there is no doubt that ADR will have a significant impact on both the healthcare and drug development industries.

A side effect is any unwanted experience a patient has with using a drug. Drug side effects include:

1. Upset stomach
2. Diarrhea or loose stools
3. Dry mouth
4. Drowsiness
5. Change in activity or mood
6. Dizziness
7. Flushing, sweating
8. Rashes and
9. Rapid heartbeat

A medication-related adverse event, or Adverse Drug Reaction (ADR), is an adverse event caused by a medication. ADR can have a significant impact on a patient's quality of life and place an additional burden on the healthcare system. ADR is one of the causes of increasing morbidity and mortality internationally, given the increasing complexity of pharmacotherapies used to treat various diseases in aging societies, will remain a significant public health concern. This scoping review identifies the most common adverse drug reactions in primary care, the drug classes most commonly associated with various degrees/types of adverse drug reactions, the causes of ADRs, their prevalence and the consequences of their incidence. It is intended to provide a detailed overview of providing ADR.

There are three types of reactions based on dose:

- Toxic reactions, which occur at supratherapeutic concentrations.
- Collateral reactions, which occur at standard therapeutic concentrations.
- Hypersusceptibility reactions, which occur at subtherapeutic concentrations in susceptible patients.

Toxic reactions occur by exaggerating the pharmacological effects of drugs. For example, bleeding from warfarin is a toxic effect and occurs by the same mechanism as its therapeutic effect (anticoagulant effect).

Adverse reactions generally occur in tissues other than those for which treatment is sought, but not necessarily in different organs. (i) The same pharmacological action that produces the therapeutic effect (eg, color blindness with sildenafil); or (ii) significant pharmacological effects (eg, dry mouth due to anticholinergic effects of tricyclic antidepressants).

Hypersensitivity reactions may be immune-mediated (eg, penicillin allergy) or not (eg, angioedema due to Angiotensin-Converting Enzyme (ACE) inhibitors).

Diagnosis of ADR is highly subjective and imprecise. Tiredness, difficulty concentrating, and excessive sleepiness have been reported by healthy people who do not take the drug. It is also known that a patient receiving placebo reports his ADRs. However, drugs as causative agents of diseases and symptoms should always be considered when making a differential diagnosis, and the following step-by-step procedures may help assess the potential for drug-related side effects. They are:

- Step 1-Identify the drug(s) taken by the patient.
- Step 2-Verify that the onset of signs and symptoms was after the initiation of pharmacological intervention.
- Step 3-Determine the time-interval between the initiation of drug therapy and the onset of signs and symptoms.
- Step 4-Stop drug therapy and monitor signs and symptoms.

Step 5-In rare cases, resuming drug therapy and monitoring for recurrence of signs and symptoms may be appropriate.

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Received: 13-Jun-2022, Manuscript No. PDS-22-17866; **Editor assigned:** 16-Jun-2022, PreQC No. PDS-22-17866 (PQ); **Reviewed:** 30-Jun-2022, QC No. PDS-22-17866; **Revised:** 07-Jul-2022, Manuscript No. PDS-22-17866 (R); **Published:** 14-Jul-2022, DOI: 10.35248/2167-1052.22.11.277.

Citation: Gordhon Y (2022) Preventing Adverse Drug Reactions after Hospital Discharge. Adv Pharmacoepidemiol Drug Saf. 11:277.