Editorial

Role of the pharmacist in adverse drug reaction monitoring

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When treating patients with drug, the goal is to utilize the most effective agent to treat a condition while minimizing hazards of therapy. These hazards are usually known as adverse drug reactions (ADRs). WHO defined ADRs as unintended and undesired harmful effects of agents administrated at doses normally used in humans for diagnostic, prophylactic, therapeutic use or for the modification of the physiological function. Undesirable effects of medications have frequently been identified only after long clinical experience. For instance, it took about 80 years to recognize aspirin as a common cause of gastric hemorrhage. Statistically, It was estimated that more than one million patients are hospitalized and more than 150,000 deaths occur in the United States each year as a direct result of drugs prescribed or purchased over the counter. Also, a lot of patients experience ADRs during hospitalization. Thus, careful therapy monitoring by pharmacists can result in detection of drug-induced illness and in many instances, these diseases can be prevented. Pharmacists have an significant duty to report ADRs to drug authority. The incidence of patients who experience ADRs in the hospital has varied between 10-20%. This discrepancy is due to several factors such as criteria for evaluating adverse reactions. However, nearly all ADRs which occur in the hospital are minor. Aspirin, digoxin, warfarin and prednisone are the common drugs that lead to hospitalization. About 65% of reported ADRs include minor GIT disturbances, rash, itching, drowsiness, insomnia, weakness, headache, muscle twitching, or fever. The majority of ADRs has resulted from pharmacologic effects of drugs and has usually been well-known toxic or side effects. Thus, more careful drug prescribing, dose selection and more effective drug monitoring numerous reactions experienced by the patients could be prevented. About 25% of the patients admitted to the hospital are found due to a drug-related problem and the most common cause is ADRs (10%). Non-compliance, inadequate therapy, drug misuse, and drug overdose accounted for about 15% of the admissions. Economic data gathered with relationship to adverse reactions were direct costs, including costs of detection, cost of avoiding adverse reactions, and treatment cost associated with the reaction. Indirect cost included premature death, loss of work and permanent disability. The indirect cost may exceed the direct cost by 10times. This suggests that when all drug-related problems are considered they represent a major public health hazard. Without a doubt, hospital pharmacists have been defining roles for themselves in the clinical environment. These roles include taking drug histories, on newly admitted patients, reviewing drug orders for drug incompatibilities, maintaining patient record and participating in evaluation of drug therapy. These activities coupled with the traditional function of control and distribution of medications makes the pharmacist ideally suitable to monitor and report ADRs. Pharmacists are requested by medical state authorities to develop a written procedure for recording and reporting ADRs. Medication errors and ADRs must be reported immediately to the practitioner who ordered the medication. Records of the episodes should become part of the patient's chart and of the pharmacy's records. ADRs data collected should be reviewed and evaluated. Published reports of ADRs should be distributed to the all medical paramedical staffs. Finally, proper steps should be taken to reduce the incidence of ADRs within the medical centers. Pharmacists may participate in monitoring activities on individual patient basis or patient populations. Methods to increase detection and reporting of ADRs in hospitals are extensively described. These methods can be retrospective and prospective surveillance which usually employ several method of reviewing the patient's medical record. Physicians, other health professionals, and even the patient can be interviewed to determine if the sign or symptom observed is likely to have resulted from a drug. These methods can also be designed to provide active feedback of information which can be used by the hospital staff to prevent the occurrence of drug-induced disease. To prevent drug-induced illness, several principles should be followed. First, one should be knowledgeable about the patient's medications (e.g. allergy to drugs, duplication of drug with similar pharmacologic activity). Second, when another medication is prescribed, it is important to have a thorough understanding of its pharmacology (to prevent various drug interactions). Third, one should be knowledgeable concerning characteristics of the patient himself (e.g., age, concomitant disease, status of renal and liver function). Finally, the patient should be given the fewest medication possible (use only those medications which are absolutely essential). Pharmacists can make significant contributions to the target of improving the efficacy and decreasing the risks of drug therapy. A constant awareness of the hazards of drug therapy and careful consideration of risk to benefit ratio when using medications are vital.

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Conflict of interest

Author declares that there is no conflict of interest.