Nursing Practice
Drug round
Adverse drug reactions

5 key points

1. An adverse reaction to a drug is any response that is unintended, and of no benefit to the patient.

2. A drug interaction occurs when the effects of one drug are altered by another and often result in reactions.

3. Type A or augmented reactions can usually be predicted.

4. Type B or bizarre reactions are unpredictable.

5. Adverse drug reactions should be reported using the Yellow Card reporting scheme.

Be aware of when you need to report a drug reaction

Adverse reactions: know the risks

Adverse drug reactions (ADRs) occur in around 20% of hospital inpatients and may be responsible for about 5% of hospital admissions (Pirmohamed et al, 2004; Mannesse et al, 1997).

The risk is higher in some groups of patients, for example, older people. Any decision to use medicines to treat or prevent ill health must take into account risks and benefits, the efficacy of the drug, the likelihood of ADR developing and their potential seriousness.

Types of ADRs

An ADR is any response that is unintended and of no benefit to patients.

“Type A” or augmented reactions are related to the dose of the drug and can usually be predicted from its pharmacological profile, for example, anticholinergic effects of antidepressants such as amitriptyline, which cause a dry mouth and urinary retention. “Type B” or bizarre reactions are unrelated to the drug’s pharmacology and are unpredictable, for example anaphylaxis to penicillin.

ADRs are a particular problem for older people. This is due to age-related changes in how drugs are absorbed, distributed, metabolised and excreted as a result of, for example, reductions in liver and renal function. This, combined with multiple pathologies and polypharmacy, significantly increases the risk of adverse reactions.

Older patients often take drugs that are associated with a high incidence of ADRs, such as those affecting the cardiovascular and central nervous systems. These issues need to be considered when reviewing the overall benefits of starting drug treatment.

Reporting ADRs

Doctors, nurses, pharmacists and patients are encouraged to report suspected ADRs to the Medicines and Healthcare products Regulatory Agency via the Yellow Card reporting scheme (tinyurl.com/adverse-drug-reactions).

This system has brought to light major drug safety issues and Fig 1 provides guidance on what should be reported.

Interactions

A drug interaction is said to occur when the effects of one drug are altered by those of another. Such interactions often result in ADRs.

The means by which interactions occur are complex, but summarised in three basic types:

- Physicochemical reaction between two drugs – for example, mixing the antibiotic gentamicin with heparin in the same syringe or intravenous line leads to formation of a precipitate;
- Alterations to a drug’s pharmacokinetic profile – for example, carbamazepine increases the metabolism of oestrogens contained in the oral contraceptive, reducing its effectiveness;
- Interactions altering the effect of a drug at its site of action – for example administering naloxone to a patient who has received morphine will result in the effects of the morphine being reversed.

Where suspicion arises that a significant drug interaction may be taking place, nurses should seek advice from the prescriber or pharmacist. They should also ensure that a medication review is carried out.

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References