MedicalXpress

Study reveals high level of adverse drug reactions in hospitals

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In a study of more than 3,000 patients, researchers at the University of Liverpool have found that one in seven admitted to hospital experience adverse drug reactions to medical treatment.

Adverse drug reactions (ADRs) are a major cause of hospital admissions, but recent data on ADRs that develop following hospital treatment is lacking. To further understanding of the clinical characteristics of ADRs, researchers at Liverpool assessed drug reactions of patients on 12 hospital wards over a six-month period.

Researchers found that 15% of patients admitted to hospital experienced one or more adverse reactions, which included constipation, confusion, renal problems, bleeding and infection with Clostridium difficile. Drugs most commonly associated with ADRs were anticoagulants, analgesics and diuretics.

The team also found that ADRs increased the length of a patient's hospital stay by an average of 0.25 days, and that those most susceptible were elderly patients on a number of different medications.

Professor Munir Pirmohamed, from the University's School of Biomedical Sciences, said: "We previously found that approximately a quarter of a million people are admitted to hospital in the UK each year following adverse drug reactions to a variety of commonly prescribed drugs, but we had very little data on ADRs experienced as a result of hospital treatment. We studied patients admitted to wards in Merseyside

hospitals and analysed suspected ADRs for causality and severity.

"A significant predictor of ADRs in hospitals is the number of medications a patient is taking; each additional drug treatment increases the risk of experiencing an adverse drug reaction. This is one of the reasons why elderly people experience a higher incidence of ADRs than young people, as they have more health conditions and generally take more medications.

"Our results show that the overall burden of ADRs on hospitals is high and therefore new methods of intervention are needed to reduce this. The results are consistent with data from other parts of the world and this is therefore not just an issue for Merseyside hospitals, but hospitals throughout the Western world.

"We are currently looking at a number of ways of improving the safety of medicines, including increased monitoring of patients and the identification of genetic factors that could increase the risk of a patient developing adverse effects. Our ultimate aim is to use a number of inter-related methods to allow us to maximise the benefits of medicines and minimise the harm."

The research, in collaboration with Liverpool John Moores University and the Royal Liverpool and Broadgreen University Hospital Trust, is published in *PLoS ONE.*

Source: University of Liverpool