

Many adverse drug reactions among hospital and emergency care patients are preventable

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Hyderabad, India: Many cases of adverse drug reactions (ADRs) seen in hospital and emergency care could be prevented, says a new study to be presented to the annual conference of the International Pharmaceutical federation (FIP) tomorrow (Thursday) . The researchers who carried out the study say that the finding that preventable ADRs are so widespread has important implications for healthcare systems.

Pharmacist Katja Hakkarainen, from the Nordic School of Public Health, Gothenburg, Sweden, and colleagues undertook the first meta-analysis of preventable [adverse drug reactions](#) (PADRs) in both out-patients and in-patients. In a meta-analysis, evidence from a number of studies is combined in order to give a result with more statistical power. By bringing together the results of 22 studies, the researchers were able to measure both the frequency of ADRs and their preventability in a hospital and emergency setting.

They found that the frequency of PADRs leading to [hospitalisation](#) or emergency visit among adult out-patients was 2.0% and that 51% of all such ADRs were preventable. Among the elderly, preventability was as high as 71%. For in-patients, the frequency of PADRs was 1.6% and 45% of all such ADRs were preventable.

"We knew that ADRs were common and that some of them were preventable", says Ms Hakkarainen, "but no previous study had looked at their frequency in both in-patients and out-patients. We would have liked also to investigate their frequency in [primary care](#), where the ADR

did not lead to a hospital or emergency visit, but there are very few data available on this issue."

Preventable ADRs can take many forms. One is internal bleeding associated with the use of anticoagulant (blood-thinning) therapy to prevent clotting; if this is poorly monitored, severe problems can occur. Inappropriate use of painkillers can also lead to severe gastrointestinal bleeding. Other types of PADR may occur when there is a contraindication for a particular treatment which is ignored or overlooked. It may also be that, although the treatment is correct, the patient takes too high a dose.

At a time when more and more medications are available and used across all age groups, the frequency of both ADRs and PADRs is bound to increase, the researchers say, emphasising that it is important to differentiate between the two. For example, some ADRs occur even though the treatment was correct and in line with recommendations, and some of these may be relatively minor when compared with the benefit of the therapy. These ADRs are considered to be non-preventable.

Other studies have found that PADRs are more severe than non-preventable ones, the researchers say. In one study, 32% of all PADRs were severe - potentially life threatening, causing permanent damage, or requiring intensive care – while only 19% of the non-preventable ADRs were severe. In another, 65% of all PADRs caused a hospital admission or prolonged a hospital stay, while most non-preventable ADRs were less severe, with only 33% leading to hospital admission or a prolonged stay.

The finding that ADRs in [hospital](#) in-patients were high may seem surprising, but according to the researchers this could be due to a poor information flow between health units resulting in a lack of information about patients' medical history, as well as the long working hours which may result in more human errors.

"The reasons for high numbers of PADRs are varied; they may include poor co-ordination of care, lack of time and knowledge among health professionals, and lack of patient education. Unfortunately there is no consensus today on what to do to prevent ADRs", says Ms Hakkarainen. "But our finding that they are so common means that it is imperative to create a climate in which they are not hidden and that there is no 'blame and shame' involved. Human error will occur while humans continue to work in healthcare and use medicines. Thus, safety measures need to be incorporated into the health system."

The study forms part of a larger project called 'Drug-Related Morbidity in Sweden (DRUMS) – prevalence, preventability and cost'. Three other studies are underway to look at all types of drug-related morbidity, including ADRs, therapeutic failure and drug dependence. "In our original studies of ADRs, we were able to investigate them in greater depth and compare our results to other literature", says Ms Hakkarainen. "Although it is clearly important to carry out such studies, we would like to emphasise that for most of the time, medications do much more good than harm. We would not like to think of people discontinuing therapy as a result of our conclusions."

Provided by International Pharmaceutical Federation

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