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Poisons experts concerned by rise in medication errors

A new study led by the New South Wales Poisons Information Centre has revealed a worrying increase in people experiencing life-threatening toxicity and/or death from accidental daily dosing of the antifolate drug, methotrexate.

The study, published today in the Medical Journal of Australia (MJA), has highlighted a need for new safety initiatives for methotrexate usage with cases reported to the Poisons Information Centre jumping by nearly 50 per cent from 2013-2014.

Dr Rose Cairns, Senior Poisons Specialist at the NSW Poisons Information Centre said the findings from the study and an increase in cases were particularly concerning.

“Methotrexate is a drug that is usually taken weekly for treatment of rheumatoid arthritis, psoriasis and inflammatory bowel disease and when used appropriately, it is very safe and effective. However, dosage errors with methotrexate can have serious, if not, fatal consequences.”

Sixteen cases of daily methotrexate dosing (three or more consecutive days) were reported to the Poisons Information Centre in 2014 with an additional 13 cases reported last year compared to just eight cases in 2013.

The study also found that seven deaths from daily dosing of methotrexate were recorded in coronial data between 2000 and 2014, with a further fifteen deaths linked to adverse effects from methotrexate usage in the same period.

“Methotrexate taken in high frequency or high dosage is extremely toxic and can result in gastro-intestinal mucosal ulceration, hepatotoxicity (liver toxicity), myelosuppression (bone marrow suppression), sepsis (serious infections) and sometimes, death.”

“The Poisons Information Centre received 92 calls in the last decade about cases where methotrexate was taken for three or more consecutive days however, we are concerned that methotrexate medication errors may, in fact, be more common as it may go unnoticed and unreported due to delayed toxicity onset,” she said.

The study, which combined data from all Australian Poisons Information Centres, the National Coronial Information System and the Therapeutic Goods Administration Database of Adverse Event Notifications, found that the most common dosage errors were mistaking methotrexate for another medication, error made by carers, errors in dosette packaging by pharmacists, prescribing errors and prescriber-patient miscommunication (particularly for new patients).

Dr Cairns said the study suggested that new strategies need to be implemented to prevent further life-threatening errors from occurring.

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“Safety strategies have been tried previously in an attempt to make dosage errors less frequent, including the ‘name the day’ guideline and reducing packet size, but with little impact,” she said.

“Simple measures like increased care in patient counselling by doctors and pharmacists, including clear verbal and written instructions/warnings about dosage, reducing package size to a four week supply, changing the tablets appearance and using alerts in prescribing and dispensing software, all have the potential to reduce the likelihood of these life-threatening incidents.”

“Although cases of daily methotrexate dosing are relatively rare, they do have extremely serious consequences, and each one is preventable.”

The study was published as *A decade of Australian methotrexate dosing errors* and can be found at www.mja.com.au (DOI 10.5694/mja15.01242).

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