



ISMP *SpecialAlert* Medication Safety Alert!

<IMPORTANT ERROR PREVENTION ADVISORY>

Methotrexate overdose due to inadvertent administration daily instead of weekly.

The Institute for Safe Medication Practices has previously reported cases of accidental *daily* administration of oral methotrexate where *weekly* dosing was intended. Some cases have resulted in fatalities. Past reports have been the subject of an article earlier this year in our acute care newsletter (Beware of erroneous daily oral methotrexate dosing. *ISMP Medication Safety Alert!* April 3, 2002 www.ismp.org/MSAarticles/Beware.htm). However, in the past month, we were made aware of two additional cases, one fatal and the other resulting in an apparent permanent disability.

The use of methotrexate is well established in oncology. For many years it has also been prescribed in low doses for immunomodulation in rheumatoid arthritis, asthma, psoriasis, inflammatory bowel disease, myasthenia gravis, and inflammatory myositis and these uses are continually increasing. Used for these latter purposes, the dose is administered weekly or twice a week. However, mistakes have been all too frequent because relatively few medications are dosed on a weekly basis and clinicians and patients are much more familiar with daily dosing of medications. In one of the reported cases, a prescription for minoxidil 2.5 mg four times daily was dispensed as methotrexate for an 86-year-old patient. In the other case, a physician prescribed methotrexate 15 mg daily rather than weekly for a 79-year-old patient. The patient received nine doses before the error was discovered. The patient later expired.

Because of the number of fatalities from errors with oral methotrexate, clinicians should consider it a high alert medication regardless of the indication. There are several safeguards that can help reduce the risk of an error when oral methotrexate is prescribed:

- As a safety practice, prescribers should include a specific clinical indication (e.g. rheumatoid arthritis, psoriasis, etc.)



within prescription directions. The drug CAN be prescribed daily for some indications in oncology with patients properly monitored. It would be useful to have a dosing guide readily available wherever the drug is stored.

- Build alerts in electronic prescribing systems and pharmacy computers to warn clinicians whenever oral methotrexate is entered so that indication and dosing frequency can be assessed.
- If the purpose of the medication is not made apparent, community pharmacists should speak directly with the prescriber to determine the reason for use of methotrexate and to verify the proper dosing schedule and promote appropriate monitoring of the patient.
- Establish a system that ensures that patients receive counseling when picking up new prescriptions and refills (e.g., mark the bag with a red flag to alert clerical staff that counseling is required, not optional).
- As a final quality control check, pharmacists should always review prescription labels with the patient or caregiver to assure accuracy.
- Ensure that written drug information leaflets are given to patients and that they contain clear advice about the weekly dosage schedule, not a daily dosing schedule. Provide patients with clear written instructions that name a specific day of the week for taking the tablet(s). When possible avoid choosing Monday since it could be misread as "morning." Prepare instructions in big print to assist elderly patients with poor eyesight.
- Explain to patients that taking extra doses is dangerous. Encourage feedback to ensure that the patient understands the weekly dosing schedule and that the medication should not be used "as needed" for symptom control.
- Prescribe and dispense the drug as a dose pack (e.g., **RHEUMATREX** by Stada Pharmaceuticals), which helps to reinforce the weekly dosing schedule.