



Centralized Medication error Reporting: once-weekly methotrexate



PMLA van den Bemt, PharmD, PhD; BAD van Soest, PharmD
BJF van den Bemt, PharmD, PhD

Introduction

In The Netherlands, hospitals report medical errors to local committees, which act at the department level or for the entire hospital. When these errors concern medication, the majority of Dutch hospitals participate in the Centralized Medication error Reporting (CMR) system, which was developed by the Dutch Association of Hospital Pharmacists. The CMR collects medication error reports from the participating hospitals and builds up a database with large numbers of medication errors. This facilitates the detection of trends and enables members to learn from errors made elsewhere. This is especially helpful for serious medication errors; for these errors special 'alerts' are sent to all participating hospitals together with recommendations to prevent the same error happening again. One of the alerts from the past is that of once-weekly methotrexate dosing. This regimen has been switched inadvertently to once-daily dosing a number of times in The Netherlands (and in other countries), sometimes with fatal results. For this reason CMR alerts have been sent and The Netherlands Healthcare Inspectorate has also issued warning letters.

What went wrong with methotrexate?

In general the errors started with prescription errors, but transcription errors (both by nurses and pharmacy technicians, when entering the prescription into the pharmacy computer) also occurred. Pharmacy computers in The Netherlands in general have very good alerting systems for overdosing, but most systems cannot handle once-weekly dosing, which is the second problem. In some hospital cases methotrexate was given to the patient for some days before the mistake was realised. Methotrexate was stored on the ward, making this possible. Finally, awareness of

once-weekly methotrexate was insufficient in both patients and nurses.

Recommendations from the CMR

The CMR's main recommendations reflect the events that can go wrong in the distribution chain:

- Every prescription for methotrexate should be checked for indication (which makes it clear whether weekly dosage is appropriate) and dosage. Methotrexate should only be prescribed by physicians experienced in prescribing and monitoring methotrexate.
- The pharmacy computer or the CPOE can be set to give an alert for each dose of methotrexate (whether it is correct or not); this facilitates the checking process stated above.
- Methotrexate should not be stored on the wards; it should only be stored in the hospital pharmacy.
- Each methotrexate weekly prescription should be dispensed for a maximum of one week; this should be recorded per patient with the date of dispensing, in order to prevent another employee from dispensing the methotrexate again the next day.
- In the hospital pharmacy store, a message should be displayed in the methotrexate area reminding everyone not to dispense for more than one week.
- Physicians, nurses and pharmacy technicians should be trained about methotrexate.

Follow-up on these recommendations

The implementation of these recommendations was checked in a random sample of 15 of the 100 Dutch hospitals. Of these 15 hospitals nine had implemented all the recommendations. Four of the other hospitals had acted on four recommendations and the other two had implemented three. In all but one hospital all methotrexate was

stored only in the hospital pharmacy (so not on the wards). In all but one hospital (a hospital other than the one mentioned above) the computer alerted for methotrexate overdosing (two hospitals) or for every methotrexate prescription (12 hospitals). The recommendation that was least well implemented was for a notice to be displayed in the methotrexate storage area (10 hospitals). All hospitals dispensed for one week and all but one recorded the dispensing date.

Conclusion

A system for centralized medication error reporting provides alerts for serious medication errors. The recommendations that accompany such an alert facilitate the improvement of medication safety, even when the error in question has not occurred in that hospital. The small sample of hospitals that was checked regarding these recommendations showed a high degree of implementation. So, systems of this type can help prevent medication errors.

Author for correspondence

BAD van Soest, PharmD (see photo right)
Dutch Association of Hospital Pharmacists – KNMP
3/5 Alexanderstraat
2514 JL Den Haag, The Netherlands
b.van.Soest@knmp.nl

Co-authors

PMLA van den Bemt, PharmD, PhD^{1,2}
(see photo left)
BJF van den Bemt, PharmD, PhD³

¹Department of Hospital Pharmacy, Erasmus MC, Rotterdam, The Netherlands

²Utrecht Institute for Pharmaceutical Sciences, Betafaculty, Utrecht, The Netherlands

³Department of Pharmacy, Sint Maartenskliniek, Nijmegen, The Netherlands