Health Quality & Safety Commission New Zealand
Kupu Taurangi Hauora o Aotearoa

Alert 14 April 2012

Medication Alert

Oral Methotrexate - once weekly dosing

For the attention of: **Chief Executive Officers**

For information to: **Chairs of DHB Medication Safety Committees or Medicine Advisory Committees, DHB Chief Pharmacists**

Purpose of this alert

- To highlight that patient harm and death have occurred in New Zealand when the weekly dosing schedule of methotrexate is inadvertently prescribed, dispensed or administered as an incorrect daily dose.[2]

REQUIRED ACTION

Organisation level

1. Standardise the protocol and processes for the management of patients receiving oral methotrexate once weekly and ensure these include the following:
   i. Prescriptions must specify a day of the week written in **full** on which the dose is to be taken
   ii. Recommend the strength of methotrexate to be prescribed and dispensed in each clinical situation e.g. consider specifying only 2.5mg tablets to be dispensed on the prescription except in exceptional circumstances (refer cases 2 and 3)
   iii. Specify the required laboratory monitoring and the doctor, (specialist or GP), who will be responsible for the laboratory monitoring where care is shared between primary and secondary care.

2. Review/develop education resources that inform patients of:
   i. Their individualised weekly dose in milligrams, number of tablets and day of the week
   ii. The storage and handling recommendations
   iii. The possible adverse reactions and the need to report them to health professionals.

   Examples of patient information resources can be found at the following:
   http://www.saferx.co.nz/Patient_info_methotrexate.pdf OR
   http://www.rheumatology.org.au/downloads/MTX230811.pdf

Individual Clinicians

1. Double-check prescriptions include the right strength, dose, frequency and day, and that they are correct for the clinical indication
2. Repeat prescriptions for methotrexate should not be provided without a full blood count and liver function test within the previous six weeks

Background to this Medication Alert

- Oral methotrexate is used for both malignant and non-malignant conditions with a wide variety of dose regimens
- When used correctly, oral methotrexate ONCE WEEKLY dosing is a safe and effective treatment for inflammatory diseases such as psoriasis and rheumatoid arthritis[1]
- Methotrexate has the potential to cause severe toxicity, especially in the elderly and in those with renal impairment
- Vomiting, diarrhoea and ulcerative stomatitis are indicators of toxicity and patients experiencing these side effects should be aware to contact the prescriber urgently.[1]

Case studies

Case One[2]

A patient died after he misread the directions on a prescription bottle and took 10mg every "morning" instead of every "Monday" (prescribed 10mg every Mon).

Case Two[3]

An 89 year old patient died from complications due to methotrexate toxicity. The rheumatoid arthritis patient had a prescription written incorrectly by a locum general practitioner in response to a letter from a physician at the local hospital advising that the patient should be started on methotrexate 5mg weekly. The patient took 5mg daily (a total dose of 35mg weekly). The pharmacist dispensed the methotrexate as prescribed into the patient's medication packs and the patient took the tablets as directed. The patient became very ill, and was admitted to hospital seven days later. The methotrexate error was identified prior to hospital admission.

Case Three[4]

A rheumatoid arthritis patient admitted to hospital had a methotrexate 20mg weekly dose documented in their clinical record. The medicine reconciliation process on admission to hospital identified that the patient had only been taking 5mg weekly for the past seven months. This was due to confusion caused by a new prescription for 8 x 2.5mg tablets when the patient had previously been prescribed and had been taking 2 x 10mg tablets, i.e. no-one had explained the change in strength and the patient had continued taking the same number of tablets as previously. When the patient had an exacerbation of their rheumatoid arthritis four months after receiving the prescription and after only taking 2 x 2.5mg, the rheumatologist prescribed leflunomide believing that the patient was taking 20mg methotrexate weekly. The need for leflunomide was reviewed and re-titration of the methotrexate dose undertaken.

References

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3. The Nelson Mail Pharmacist not to blame for death, says coroner. URL: http://www.stuff.co.nz/national/health/2983300/Pharmacist-not-to-blame-for-death-says-coroner (accessed 10.2.2012)
4. DHBNZ Safe and Quality Use of Medicines Group. Different strengths of methotrexate tablets can cause confusion. Oct 2009; 5(4). URL: http://www.safeuseofmedicines.co.nz/LinkClick.aspx?fileticket=OHvV3MnoiOs%3d&tabid=95&mid=440&language=en-NZ (accessed 10.2.2012)

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