Institute for Safe Medication Practices Canada
REPORT MEDICATION INCIDENTS
Online: www.ismp-canada.org/err_index.htm
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A KEY PARTNER IN
CMIRPS Canadian Medication Incident Reporting and Prevention System
SCDPIM Système canadien de déclaration et de prévention des incidents médicamenteux

ISMP Canada Safety Bulletin

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ALERT: Methylene Blue Interaction Leads to Serotonin Syndrome

Indigo carmine, a marker dye often used in cystoscopy and in ureteral and other operative procedures, was recently discontinued.[1] Some Canadian healthcare facilities have started to use methylene blue as a replacement.[1] ISMP Canada received a report of serotonin syndrome experienced by a patient who was taking paroxetine and who received methylene blue for a procedure. As a result of an interaction between the 2 products, the patient required intubation and admission to the intensive care unit.

It is not widely known that methylene blue is a monoamine oxidase inhibitor (MAOI). MAOIs interact with many serotonergic drugs, including selective serotonin reuptake inhibitors (e.g., paroxetine) and serotonin norepinephrine reuptake inhibitors (e.g., venlafaxine), with this type of interaction leading to an elevated level of the neurotransmitter serotonin.[1-3] Elevated serotonin can result in serotonin syndrome, a potentially life-threatening condition presenting as fever, diarrhea, restlessness, incoordination, hallucinations, agitation, tachycardia, or cardiovascular compromise.[2] Intravenous administration of methylene blue in patients receiving any of the aforementioned medications has resulted in serotonin syndrome.[3]

All facilities and practitioners are cautioned to treat methylene blue as a medication, specifically by writing orders for its use and entering these orders into the pharmacy computer system to allow potential drug interactions to be identified. In addition, it is recommended that operating room and other practitioners without traditional pharmacy support incorporate interaction checks for methylene blue within their existing processes. Ultimately, it is critical that all patients receiving methylene blue have a complete and up-to-date medication history for use in assessing the risk for serotonin syndrome.

References

1. Indigo carmine injection. Bethesda (MD): American Society of Health-System Pharmacists; 2015 Jun 30 [cited 2015 Aug 11]. Available from: http://www.ashp.org/menu/DrugShortages/CurrentShortages/Bulletin.aspx?id=861
2. Serotonin syndrome. In MedlinePlus [database]. Bethesda (MD): U.S. National Library of Medicine; 2014 Jul 22 [cited 2015 Aug 11]. Available from: http://www.nlm.nih.gov/medlineplus/ency/article/007272.htm
3. Methylene blue injectable in combination with serotonin reuptake inhibitors - association with serotonin toxicity - notice to hospitals. Ottawa (ON): Health Canada; 2011 Feb 17 [cited 2015 Aug 11]. Available from: http://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2011/14648a-eng.php

Oral Chemotherapy: Not Just an Ordinary Pill

SafeMedicationUse.ca

Mistakes with oral chemotherapy medications can lead to serious side effects and even death. SafeMedicationUse.ca received a report about a consumer who was taking oral capecitabine according to a prescribed dosing cycle that included a drug-free period. While the consumer was in hospital, capecitabine was given daily, and upon discharge, the medication was prescribed to be continued daily. As a result, the drug-free period was omitted. The problem was discovered by the oncologist 1 week after the consumer's discharge.

Tips for Practitioners

- When processing a prescription for oral chemotherapy, always check the patient's diagnosis, height, weight, and chemotherapy schedule.
- Verify the medication and dosing schedule with the patient and/or caregivers.
- For complex schedules, provide dosing information in writing (e.g., with a dosing calendar).

For additional information for consumers and practitioners on the topic of oral chemotherapy, read the complete newsletter at www.safemedicationuse.ca/newsletter/newsletter_OralChemotherapy.html

CMIRPS SCDPIM
Canadian Medication Incident Reporting and Prevention System
Système canadien de déclaration et de prévention des incidents médicamenteux

The Canadian Medication Incident Reporting and Prevention System (CMIRPS) is a collaborative pan-Canadian program of Health Canada, the Canadian Institute for Health Information (CIHI), the Institute for Safe Medication Practices Canada (ISMP Canada) and the Canadian Patient Safety Institute (CPSI). The goal of CMIRPS is to reduce and prevent harmful medication incidents in Canada.

HIROC

The Healthcare Insurance Reciprocal of Canada (HIROC) provides support for the bulletin and is a member owned expert provider of professional and general liability coverage and risk management support.

ISMP CANADA

The Institute for Safe Medication Practices Canada (ISMP Canada) is an independent national not-for-profit organization committed to the advancement of medication safety in all healthcare settings. ISMP Canada's mandate includes analyzing medication incidents, making recommendations for the prevention of harmful medication incidents, and facilitating quality improvement initiatives.

Report Medication Incidents

(Including near misses)

Online: www.ismp-canada.org/err_index.htm
Phone: 1-866-544-7672

ISMP Canada strives to ensure confidentiality and security of information received, and respects the wishes of the reporter as to the level of detail to be included in publications. Medication Safety bulletins contribute to Global Patient Safety Alerts.

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www.ismp-canada.org/stayinformed/

This bulletin shares information about safe medication practices, is noncommercial, and is therefore exempt from Canadian anti-spam legislation.

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