



June 24-27, 2016

THE FUTURE IS HERE
Calgary, AB

www.pharmacists.ca/conference

Medication Incidents Involving Immunosuppressants: A Multi-Incident Analysis

M. TRUONG¹, A. CHEN¹, and C. HO^{1,2}

1. Institute for Safe Medication Practices Canada

2. Leslie Dan Faculty of Pharmacy, University of Toronto



UNIVERSITY OF TORONTO
LESLIE DAN FACULTY OF PHARMACY

CMIRPS
Canadian Medication Incident
Reporting and Prevention System

SCDPIM
Système canadien de déclaration et de
prévention des incidents médicamenteux



INTRODUCTION

- Immunosuppressants are typically cautiously prescribed due to their unique dosing regimens and broad spectrum of drug interactions. Their overall complexity and therapeutic role, while important, can cause significant patient harm when used incorrectly due to medication errors.
- ISMP Canada has identified certain immunosuppressants such as Azathioprine, Cyclosporine and others to be “high-alert” medications.

OBJECTIVE(S)

- To identify potential contributing factors and areas of vulnerability towards medication incidents involving immunosuppressant therapies.
- To make recommendations and hope to pave way for future developments in quality improvement initiatives.

METHOD(S)

Searched ISMP Canada Community Pharmacy Incident Reporting (CPhIR)¹ Database for medication incidents* involving immunosuppressants from January 2010 to May 2015.

Selected Incidents for final analysis.

61 incidents* were retrieved but only 47 incidents* met the inclusion criteria and were included in this multi-incident analysis

Analyzed and categorized incidents into three main themes and further divided into subthemes.

Identified potential contributing factors.

Provided recommendations to fill in patient-safety gaps

*All relevant medications of interest were collected from the American Hospital Formulary Service (AHFS) classification system from the American Society of Health-System Pharmacists (ASHP). Intravenous immunosuppressants were excluded from this analysis as they are not typically prescribed in the community/ambulatory setting.

RESULT(S)



PREVENTION OF WRONG INDICATIONS MEDICATION INCIDENTS

LOOK-ALIKE & SOUND-ALIKE

Example) Physician ordered cyclosporine 75 mg once daily but pharmacist filled cyclophosphamide 75 mg once daily. Nurse noticed error prior to administering to patient.

Recommendations:

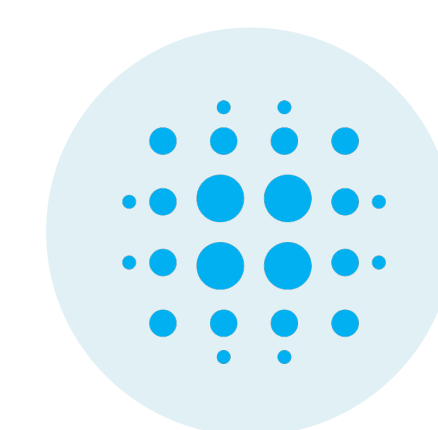
- Utilize electronic prescription order sets
- Independent double-checks
- Request prescribers to list indication on prescription
- Gather information from patients during counselling and monitoring of drug therapy

FORMULATION

Example) The pharmacist filled Prograf® (immediate release tacrolimus) instead of Advagraf® (extended release tacrolimus). Error found when checking hardcopy name and DIN.

Recommendations:

- Computerized alerts act as forcing functions for high-alert drugs
- Independent double-checks
- Education and continuous professional development on medication therapy management for clinicians and pharmacy staff



PREVENTION OF EFFECTIVENESS-RELATED MEDICATION INCIDENTS

UNDER-DOSING

Example) Heart transplant patient received a prescription written for mycophenolate 1000 mg twice daily, however the prescription filled as mycophenolate 500 mg, take 2 tablets once daily.

Recommendations:

- Implement rules and policies for high-alert drugs (e.g. documenting calculations on prescriptions during order-entry)
- Perform independent double checks



PREVENTION OF SAFETY-RELATED MEDICATION INCIDENTS

LOOK-ALIKE & SOUND-ALIKE

Example) Daughter noticed that the medication frequency of dosing was not right. Was dispensed QID (four times a day) and should have been QD (once daily). Physician wrote QD and was misread as QID.

Recommendations:

- Perform independent double checks for all prescriptions during the order entry and dispensing stage
- Engage in counselling and follow-up conversations with patients to address potential misuse of medications and ensure compliance

FORMULATION

Example) A patient receiving Rapamune® (sirolimus) in a hospital also received a couple doses of Biaxin® from a community pharmacy. After initiating Biaxin®, the patient felt ill and consulted the physician. Biaxin® was switched to levofloxacin due to interaction.

Recommendations:

- Encourage regular communication amongst healthcare providers within the patient's circle of care whenever changes are made to a patient's drug therapy
- Encourage patients to pick up medications from the same pharmacy for consolidated and comprehensive medication profiles

CONCLUSION(S)

As a high-alert drug class, immunosuppressants provide patients with great benefits, but also with equally great risks. The following considerations encompass system-based strategies that may be integrated into daily practice to reduce the risk of medication incidents.

- To ensure look-alike / sound-alike drugs are clearly distinguished from one another; safeguards (e.g. physical dividers) should be integrated into dispensary storage or inventory areas.
- Standardization of procedures will help mitigating errors, such as e-prescribing (to prevent illegible hand-writing) and comprehensive documentation (e.g. indication of therapy).
- Independent double checks to verify accuracy of order entry and dispensing, along with patient communication during medication pick-up, can help ensure that the right medication is being dispensed to the right patient.
- Regular follow-up and monitoring is necessary not only for assessing efficacy, safety and tolerability of therapy, but also to create opportunities to update medication lists and patient profiles.

ACKNOWLEDGEMENTS

ISMP Canada would like to acknowledge support from the Ontario Ministry of Health and Long-Term Care for the development of the Community Pharmacy Incident Reporting (CPhIR) Program (<http://www.cphir.ca>). The CPhIR Program also contributes to the Canadian Medication Incident Reporting and Prevention System (CMIRPS) (<http://www.ismp-canada.org/cmirms/>). A goal of CMIRPS is to analyze medication incident reports and develop recommendations for enhancing medication safety in all healthcare settings. The incidents anonymously reported by community pharmacy practitioners to CPhIR were extremely helpful in the preparation of this multi-incident analysis.

REFERENCES

1. ISMP Canada. Community Pharmacy Incident Reporting (CPhIR) Database. <http://www.cphir.ca>

Images:

Blur icon by Rohith M S from thenounproject.com
First aid kit icon by Sagit Milshtein from thenounproject.com
Heart disease icon by To Uyen from thenounproject.com

CONTACT INFORMATION

For more information contact us below:

Website: www.ismp-canada.org
Telephone: 416-733-3131 (Toronto)
1-866-54-ISMP (1-866-544-7672) (Toll Free)
Fax: 416-733-1146
Address: 4711 Yonge Street, Suite 501
Email: info@ismp-canada.org