

Evaluation and expansion of pharmacy intravenous to oral dosing protocol at a university hospital

Aaron Steele, PharmD, Carrie Cannella, PharmD

Department of Pharmacy, The University of Kansas Hospital, Kansas City, KS

Background and Objectives

Background

As the clinical pharmacist's role continues to develop, many protocols are implemented to expand their scope of practice. One of these protocols that many institutions have implemented is the pharmacist IV to PO dosing protocol. From a patient perspective, the oral dosage form is a less invasive route of administration. Also, it is associated with less adverse effects such as extravasation and infections. From a nursing perspective the oral dosage form is much easier to administer as compatibility of intravenous solutions or the patient having IV access are no longer issues. With the many benefits of the oral dosage form over the intravenous form, a protocol allows pharmacists to monitor for these switches and order if appropriate.

Objectives

- Evaluate current adherence to the IV to PO protocol at the University of Kansas Hospital
- Evaluate and update the current pharmacist IV to PO protocol
- Develop proposals for new additions to the protocol to be presented to the P&T committee

Study Methods

A retrospective evaluation of adherence to the current protocol was performed during the month of September. Looking at medications currently on the protocol it was determined whether they were converted to the oral route in accordance to the guidelines laid out in the protocol. This data would give an estimate on the overall IV to PO conversion adherence throughout the hospital. A financial analysis was then performed on this data showing the potential cost savings on those medications that were not converted appropriately.

Two surveys were conducted in order to gain insight on possible additions of medications to the current protocol. First, a survey was sent out via email to other institutions within the University HealthSystem Consortium (UHC) to see what medications were included in their pharmacist IV to PO protocol. Also, a survey was sent out to the pharmacists at the University of Kansas Hospital to gain insight on what medications they thought would be useful additions.

Results

The current overall adherence is 89.2%. Figure 1. shows the adherence per individual medication during the month of September.

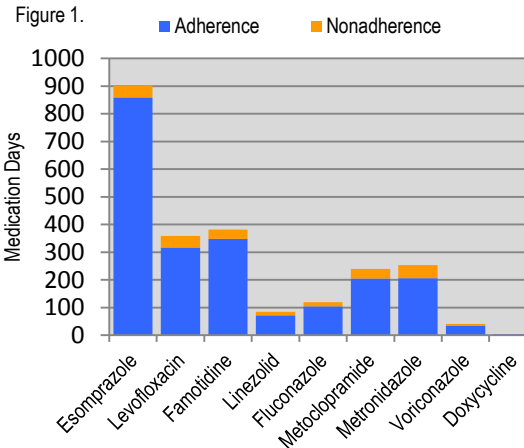
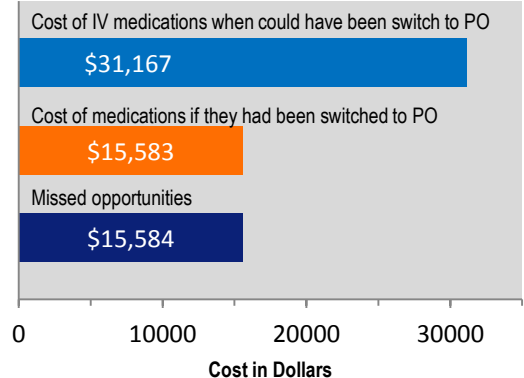


Figure 2. shows the annualized financial analysis of IV to PO protocol adherence



Results Continued

The analysis of the adherence to the protocol during the month of September showed very good compliance. Even with such good compliance the financial analysis showed that over \$15,500 more could be saved a year.

With such good adherence the addition of new medications would make the protocol more robust. Looking at both of the surveys conducted there were four medications that would be helpful additions to the protocol:

- Azithromycin
- Levetiracetam
- Levothyroxine
- Phenytoin

A two week evaluation of these medications was performed during the month of October. This analysis showed the addition of these medications could provide the opportunity to evaluate close to 500 more patients a year. Given the current 89.2% compliance, this would provide benefits for patients, nursing staff and financially. *No data was collected for azithromycin IV due to its new formulary status.

Next step is to update the protocol to reflect these changes. For both levothyroxine and phenytoin an addendum will be added to explain the proper procedure for conversion from IV to PO since they are not a one-to-one conversion. These additions will be proposed to the P&T committee during the January meeting.

Future Direction

The next expansion of the protocol is to look into criteria based conversions. These medications would require a more detailed procedure for switching from the intravenous form to the oral form of administration. Two examples of these are: conversion of caspofungin to voriconazole and conversion of ampicillin/sulbactam to amoxicillin/clavulanic acid.

Contact Information

Aaron Steele, PharmD
Health-System Pharmacy Administration Resident
University of Kansas Hospital
Kansas City, KS
asteele@kumc.edu