

## Early Switch from intravenous to oral therapy in hospitalized patients in Neuroscience center at KFMC: A cost-minimizing approach

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### Abstract

**Background:** In each hospital, there is a good number of patients who are candidates for the switch-over from intravenous (IV) to oral therapy.

The main hindrance that restricts intravenous to oral conversion is the idea that oral medications do not reach the same bioavailability as that of intravenous medications and that the same item must be used both intravenously and orally. Although several drugs commonly used in hospitalized patients are equally bioavailable intravenously and orally, Patients usually are not shifted to the oral medication when stable and taking oral medications or eating an oral diet

There are many advantages involved in earlier conversion from the intravenous to the oral therapy, including but not conclusive to less nursing time for medication administration, lower cost, less intravenous catheters needed can lead to increased patient satisfaction and safety.

**Objective:** Establishment of a pharmacist-led IV to oral switch over protocol in the national neuroscience institute (NNI) at King Fahad Medical City (KFMC), in an attempt to reduce the annual medication cost.

### Method:

- Setting: the study was conducted in the NNI of KFMC in Riyadh Saudi Arabia.
- The study was prospective. We identified five targeted medications that are commonly prescribed in NNI (NHDU, NW1, Stroke) inpatient wards with almost identical oral and intravenous bioavailability (Table 1). 45 patients were recruited. Their files were reviewed by the pharmacist and recommendation to switch was communicated to physician either verbally or documented in the patient file. The total cost of the medications was compared between oral and intravenous forms according to the length of stay in the ward. Inclusion and exclusion criteria are mentioned (Table 2).
- Difference between oral and IV medication cost were compared using Mann-Whitney U test. All data entry and statistical analyses were performed using SPSS 22.0 software.

**Results:** This study has been in place for 6 months. 71 recommendations were made. Of these recommendations, 11 (15.5%) were rejected and 60 (84.5%) were accepted and implemented, resulting in a cost savings of 10,652 SAR (P=0.001). When annualized, the expected savings is 21,304 SAR or nearly the monthly salary of 2 full-time pharmacists.

**Conclusion:** This study demonstrates successful implementation of a pharmacist-led switch-over strategy. Duration of IV treatment reduced dramatically and the annual savings significantly improved. This program has been well accepted by physicians and pharmacists. It appears to be having a positive impact on physician awareness of using oral medications when appropriate. This study may be used as a template for the introduction of further pharmacist-led early IV to oral switch-over initiatives.



### Biography:

Leena H. Saeed is a clinical pharmacist and she graduated from King Saud University 2009 with first honor degree. She held Master Degree in Clinical pharmacy on 2013 also from King Saud University. Currently working as clinical pharmacist at King Fahad Medical City, Saudi Arabia. Her research interests also include pharmacoconomics – the use of drug formulations for cost minimization also in pharamcogenetics

### Speaker Publications:

1. "Genotype-Phenotype Analysis of CYP2C19 in Healthy Saudi Individuals and its Potential Clinical Implication in Drug

Therapy”; International journal of medical sciences/ Volume 10, Issue 11

2. “Guidance for reporting outcomes in clinical trials: scoping review protocol”; BMJ Open 2019;9:e023001

3. “Streamlining and cycle time reduction of the startup phase of clinical trials”; Trials, Volume 21 • Issue 1.

4. “Loss-of-function mutations in UDP-Glucose 6-Dehydrogenase cause recessive developmental epileptic encephalopathy”; Nature Communications/ Volume 11 No. 1

5. “Prospective evaluating the appropriate use of piperacillin /tazobactam in cardiac center of a tertiary care hospital”; Journal of Cardiothoracic Surgery/ Volume 15 No. 1.

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