Benefit of Medication Reviews by a Renal Pharmacist in the Setting of a Computerized Physician Order Entry System

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Background and Aim
A ‘renal pharmacist consultant service’ (RPCS) reviewing patients with renal impairment (RI) for drug-related problems (DRP) can foster patient safety [1]. However, the benefit of this service in the new setting of a computerized physician order entry (CPOE)-system with a clinical decision support system (CDSS) is unknown. The aim of the study was to evaluate a RPCS on wards with CPOE-CDSS, its need in general and its effectiveness on prescription changes and, thereby, on patient safety.

Results
During 53 working days, 712 (30.5%) of 2331 screened patients were included with an eGFR\textsubscript{absolute}/KreaCl < 60 ml/min and a pharmacist-led medication review was performed for all medication prescribed in the CPOE-CDSS (Meona®). In 79 of 712 (11.1%) patients one or more DRP were detected (median 1 DRP (1-3) per patient) and written recommendations were shared via Meona®. In total, 104 DRP were identified, mostly caused by ‘dosage too high’ (n= 55; 52.9%), ‘dosage regime wrong’ (n=13; 12.5%), and ‘contra indication’ (n= 9; 8.7%) (Figure 1). Acceptance rate of recommendations was 74.0% (n=77/104). In nine cases (8.7%) recommendation was consciously retained after discussion because of lack of alternatives, in 11 (10.6%) prescription remained unchanged for unknown reasons and in seven (6.7%) the result was unknown due to discharge (Figure 1).

Conclusion and relevance
The pharmacist-led medication reviews identified DRP in patients with RI even in the setting of prescribing in a CPOE-CDSS. A RPCS in this setting successfully increased appropriate prescribing by physicians and, thus, improved patient safety.

Materials and Methods

Figure 1: Identified drug-related problems (DRP; n=104) in 79 (11%) of 712 patients with eGFR\textsubscript{absolute}/KreaCl of < 60 ml/min receiving a pharmacist-led medication review. The DRP of either treatment safety or treatment effectiveness is categorized in one main cause and more than one intervention might be necessary to solve DRP. Monitoring: refers to control of adverse drug events or serum blood levels (e.g. electrolytes, creatine kinase). Consciously retained: means that the problem was discussed with the physician but the consensus decision was to only monitor the DRP because of the lack of suitable therapy alternatives for this patient’s situation.

Literature