Analysis of facsimile or online prescribing in chemotherapy

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BACKGROUND:
The contribution of the pharmacy team in daily checking of the prescriptions for chemotherapy preparations and the thorough advising on the management of drug therapy are important challenges for hospital pharmacists to avoid serious clinical consequences caused by Drug Related Problems (DRP). Nevertheless, 12% of errors occur by transcription. In this study hospital prescriptions were sent to the pharmacy mostly by fax (2/3 of the prescriptions). However CPOE (Computerized Physician Order Entry) offers a more suitable way to transmit prescriptions to the pharmacy team and can reduce errors.

METHODS:
All prescriptions for chemotherapy preparations in an university hospital were evaluated over a two-months period in a prospective single-centre study design. Clinical pharmacists reviewed daily all prescriptions. In case of unclear, incorrect or uncompleted prescription the ward was called in order to clarify and/or to correct the order. Errors in prescriptions were separately evaluated for fax and online prescriptions. The errors were classified into formal (“administrative”) and non-formal (“medical-related”) and categorized according to the error-type. Moreover the life-threatening DRPs in which the intervention was crucial were recorded.

CONCLUSIONS:
The remarkable reduction of errors by using CPOE supports the hypothesis of the best way of communication between wards and pharmacy team. Using CPOE would avoid almost 80% of the errors. Furthermore both, the medical and the pharmacy team save time and increase efficiency.

RESULTS:
In the study period 850 cycles of chemotherapy prescriptions for in- and outpatients were reviewed. Out of them 577 were ordered by fax (68%). 112 interventions were made in order to solve administrative and medical-related errors: 13,2% of the prescriptions needed an intervention. However, this high percentage was considerably influenced by the way prescriptions were sent. In fact, 17,7% of the errors occurred by fax prescription and only 3, 7% occurred by CPOE.

Also the type of error was highly influenced by the way of prescription: fax prescriptions showed more administrative errors (56,9%) compared with 40,0% of CPOE ones.

The praxis used in both, administrative and medical-related errors, was to send back the prescription and ask for missing data or clarifications and/or to suggest modifications in the therapy. This kind of management is time consuming and cumbersome, thus hindering the clinical practice. On the other hand, it is necessary in order to improve the quality of the therapy and patient safety.

Critical errors occurred 4 times more frequently by FAX prescriptions.

Out of medical-related errors 21 were classified as life-threatening.

8 cases of over-dosage:
3 of these were over the maximal dosage permitted;
2 of these were in cases of renal impaired patients;
13 cases of missing/incorrect clinically relevant patient's data (serum creatinine, AIBW index, diabetes-positive patient indication, BW etc)

This data are crucial in order to calculate the right dosage for the individual patient; thus we can consider such omission as potentially harmful for the patient.

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