

MEDICATION ERRORS IDENTIFIED THROUGH PHARMACEUTICAL VALIDATION IN CHEMOTHERAPY TREATMENTS

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OBJECTIVE

To evidence the impact of chemotherapy treatments pharmaceutical validation on medication-related errors (ME) rate.

METHODS

Pharmaceutical validation was implemented on chemotherapy regimens (antineoplastic and supportive drugs) to prevent ME of clinical significance (e.g. wrong dose) so ME that have no effect on security or effectivity were documented but not prevented (e.g. wrong compatible vehicle).

Medication Errors of prescription and preparation processes were prevented and documented during two years (January 2001-December 2002) such as is defined in a sequential way established by Oncofarm™ 3.3. At the beginning of January 2002 the pharmaceutical validation was improved and the following systematic steps were established:

a) Prescription: chemotherapy regimens indication to diagnostic and stage disease, sequence and periodicity cycle, doses: automatic vs. manual calculated doses and dose adjustment according to the grade of hematological, renal and hepatic toxicity.

b) Intravenous mixtures quality control: 1) quantitative (number of vials used, final drug concentrations and flow rate); 2) qualitative (drug, vehicle and volume, and mixtures conditioning).

Statistical analysis: Drug use process ME rate (ME per 1000 patients-day) were calculated with their 95% CI to compare ME prevented in each year.

RESULTS.

In 2001 17491 preparations equivalent to 6450 patients-day (stays) were validated; a total of 129 ME were identified and 110 ME were prevented (53 prescription ME/57 preparation ME). In 2002 15655 preparations equivalent to 6281 patients-day were validated; a total of 228 ME were detected and 118 ME were prevented (73 prescription ME/45 preparation ME). The following table shows ME rate intercepted and prevented at each process.

PROCESS	2001	2002	ODDS RATIO
PRESCRIPTION	8.2 (6.2-10.8)	11.6 (9.1-14.6)	1.4
PREPARATION	8.8 (6.7-11.4)	7.2 (5.2-9.6)	0.8
TOTAL	17 (14-20.5)	19 (16-22.5)	1.10

CONCLUSIONS:

Systematic pharmaceutical validation increases the identification and prevention of medication errors in oncology patients. This situation reduces the potential of clinical significant drug related problems. Therefore the quality of care provided to oncologic patients is improved. The rate of ME identification from prescription was increased in 41.46 % during 2002, by contrast the rate of ME identification from preparation with clinical significance was decreased in 18.18%.

