Does a hospital formulary system impact timely medication administration and quality of patient care?

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INTRODUCTION

The prevalence of drug omission is often underestimated but its impact can be clinically relevant

→ Hypothesis: Delays in administering non-formulary/non-stored drugs could impair the quality of care

→ Aims: 1° Determine the time between the first prescribed dose and its actual first administration and calculate the number of omitted doses

2° Analyze the clinical relevance of the identified delays

METHOD

☆ Retrospective descriptive 3 months survey of patients hospitalized on the internal medicine wards

☆ Network of 4 hospitals supplied by a centralized pharmacy located in one of the sites

☆ Identification of prescriptions through query in electronic records

→ Main outcome measures:

1° Median time between the first prescribed dose and its first administration

2° Categorization of patient’s harm caused by the delays of time-critical drugs1,2,3 (NCC-MERP taxonomy of medication errors)

RESULTS

1° Analysis of 16’954 prescriptions:

☆ Median time to administration < 1h for both non-stored/non formulary and formulary drugs

CONCLUSION

☆ Non-stored/non-formulary drugs take more time to be delivered than formulary drugs, but >95% of formulary drugs and 90% of non-stored/non-formulary drugs are administered within 24h following their prescription

☆ None of the 17 patients who experienced delays underwent severe harm

☆ No systematic cause of omission was identified

→ Further studies should focus on all dose omissions during hospitalization

2° A delay of ≥ 1,5 omitted dose was found for 332 prescriptions (1.96%)

Of them, only 17 cases were time-critical drugs and considered for potential clinical relevance (NCC-MERP categories C-I)

REFERENCES


Figure 1: Proportion of drugs and their time to administration for formulary (n=15’608) and non-stored/non-formulary (n=1346) drugs for the 4 hospital sites

Table 1: Distribution of identified potentially clinically relevant cases of omission. 2 patients’ required monitoring to confirm that it resulted in no harm and for 1 patient, the error may have contributed to temporary harm and required intervention

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