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Prescription validation and pharmaceutical intervention in an adult emergency department: Implementation and evaluation

Mise en place et évaluation de validations d'ordonnances et d'interventions pharmaceutiques dans un service d'urgences adultes

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Summary

Background. The aim of this study was to develop a prescription validation procedure in an emergency department (ED) in order to improve drug safety for patients in a setting with a high prevalence of iatrogenic risk.

Material and methods. A pharmacy resident performed pharmaceutical analyses of prescriptions written in the ED in the morning (8:30–12:30). Working under the responsibility of a senior pharmacist, the resident had access to patient charts and attended ED staff meetings. Pharmaceutical interventions were proposed to the attending physician if the prescription deviated from good practices according to the prescription validation methodology of the French society of clinical pharmacy (SFPC).

Results. Four hundred and eighty-one prescriptions were analyzed from November 11, 2015 through April 15, 2016. Pharmaceutical interventions were proposed for 73 prescriptions (15.2%) because of drug errors. Contraindications, overdosing, and inappropriate administration routes accounted for 78% of these errors.

Résumé

Introduction. Notre objectif était de mettre en place une validation pharmaceutique des prescriptions dans un service d'urgences adultes pour améliorer la sécurisation de la prise en charge médicamenteuse des patients dans un service à haut risque iatrogène.

Matériel et méthodes. Validation des ordonnances des patients avec un traitement chronique par un interne en pharmacie (sous la responsabilité d'un pharmacien senior) suivant la méthodologie de la Société française de pharmacie clinique (SFPC). Cela entre 8 h 30 et 12 h 30, après participation au staff du service. À chaque problème identifié, des interventions pharmaceutiques (IP) étaient proposées au médecin en charge du patient.

Résultats. Quatre cent quatre-vingt-un prescriptions ont été validées entre le 02 novembre 2015 et le 15 avril 2016 dont 15,2 % avec des problèmes et ayant fait l'objet d'IP. Les contre-indications, les surdosages et les administrations non appropriées représentaient 78 % des problèmes. On retrouvait 82,2 % d'IP acceptées ayant entraîné une modification de prescription.

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Discussion/Conclusion. The rate of pharmaceutical intervention was high, providing evidence of the need for prescription validation in this kind of medical ward in order to improve the quality of drug management and avoid iatrogenic risks.

Keywords : Clinical pharmacy, Emergencies, France, Pharmaceutical interventions, Prescription validation

Discussion/Conclusion. Le taux d'IP était élevé et justifiait le maintien d'une présence pharmaceutique dans ce service pour améliorer la qualité de la prise en charge médicamenteuse et lutter contre l'iatrogénie médicamenteuse.

Mots clés : France, Interventions pharmaceutiques, Pharmacie clinique, Urgences, Validation d'ordonnances

Introduction

The length of stay in the emergency department (ED) may reach 24–48 h, or in certain circumstances even 72 h, while awaiting referral to an acute-care ward, a nursing home, or discharge to home.

Many patients receiving care in the ED are elderly with multiple co-morbid conditions and numerous medications. For drug management, the time in the ED involves a critical transition from ambulatory to hospital care. There is a risk that a non-intentional alteration in the patient's drug regimen could aggravate an acute often complex situation. Moreover, for many patients, intentional changes implemented in the emergency setting are not always made with full knowledge of the necessary clinical and biological elements. The risk of drug errors in the ED is well-known [1]. It is estimated that 4% of patients attending the ED experience drug-related adverse effects due to prescription errors [2].

The presence of a clinical pharmacist in care units enables a reduction in the rate of drug errors and increases care safety [3,4], as has been demonstrated specifically in the ED [5,6]. There are nevertheless few clinical pharmacists in the ED. Cohen et al. [7] reported a review of the literature on clinical pharmacy services in the ED and found that only 12 hospitals had published on the topic. In their national review for 2008, the American Society of Health-System Pharmacists (ASHP) [8] reported that only 6.8% of healthcare institutions had a clinical pharmacist practicing in the ED. The 2011 ASHP report [9] also underscored the fact that in the ED, only 9.1% of prescriptions were controlled by a pharmacist before administration. In Europe, there are even fewer clinical pharmacists in the ED [10].

Dans ce contexte, l'hypothèse émise était qu'un déploiement de la validation pharmaceutique des ordonnances (Code de la Santé publique article R4235-48) et des interventions pharmaceutiques [11] aux urgences, permet l'optimisation de la prise en charge thérapeutique des patients.

The purpose of this work was to improve drug safety for patients in the ED setting where the iatrogenic risk is high. The main objective was to implement pharmaceutical analysis of prescriptions written in the adult ED of a university hospital. Secondary objectives were to evaluate the resulting pharmaceutical interventions (PIs) and to describe prescription errors.

Material and methods

A validation process for prescriptions written for patients with an ongoing treatment was developed. The process, which involved pharmaceutical analysis followed by a pharmaceutical intervention (PI) as needed, was implemented for a period of five and a half months from November 2, 2015 through April 15, 2016 in the adult ED of a university hospital in France. Two care circuits were involved, an ambulatory circuit without hospitalization and a hospitalization circuit for patients requiring further care with explorations and adapted treatments.

The pharmaceutical analysis was performed only for prescriptions concerning patients entering the hospitalization circuit who had an ongoing treatment that had been prescribed earlier by a private practitioner or in a hospital setting. This analysis phase (performed by a pharmacy resident under the responsibility of a senior pharmacist) was conducted after the patient had been admitted to the ED. The resident worked in the morning, from 8:30 am through 12:30 pm, and analyzed all first prescriptions hand-written by the attending physician (prescription software was not available in this unit). Treatments were delivered nominatively by a pharmacy assistant. The pharmacy resident attended the ED staff meeting held every morning at 8:30 and had access to patient files. The prescription validation process was performed for patients admitted the day before or during the night and morning before the staff meeting who were still in the ED.

The prescription validation guidelines published by the French society of clinical pharmacy (SFPC) [12] were applied. This is a two-level validation involving:

checking the coherence of the prescription and the drug chosen in relation to the patient's profile and the reason for hospitalization;