

Original article

Causes of drug-related problems in the emergency room of a hospital in southern Brazil

Roberta Simone Andrezza*, Mauro Silveira De Castro, Patrícia Sippel Köche, Isabela Heineck

School of Pharmacy, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brasil

ARTICLE INFO

Article history:

Received 24 January 2011

Received in revised form 25 April 2011

Accepted 4 May 2011

Available online 10 August 2011

Keywords:

Drug-related problem

Emergency room service

Drug utilization

Adverse drug reaction

Pharmaceutical care

ABSTRACT

Objective: To assess the frequency and types of drug-related problems (DRPs) in patients seeking emergency care in a teaching hospital in southern Brazil and to identify the possible causes and drugs involved in these problems.

Method: A cross-sectional study was performed, using a structured questionnaire for data collection. Multivariate logistic regression was used to control for possible confounding factors and to establish an independent association between the presence of DRPs and the amount of medication, patient's age and their educational level.

Results: A total of 350 patients were interviewed. The frequency of DRPs was 31.6%. Quantitative ineffectiveness was observed in 30.9% of DRPs and the main cause of the DRP was an inadequate dosing regimen. Sixty-six DRPs (53.7%) were caused by the health system or the health professionals. Factors independently influencing the development of DRPs were educational level and the number of drugs being taken.

Conclusions: Our data suggest that one-third of the patients attending the emergency room of our hospital had a drug-related problem, highlighting the importance of considering drugs as a possible cause of health problems and the need for their more rational use.

© 2011 SESPAS. Published by Elsevier España, S.L. All rights reserved.

Problemas relacionados con medicamentos en el servicio de urgencias de un hospital en el sur de Brasil

RESUMEN

Objetivo: Evaluar la frecuencia y el tipo de problemas relacionados con medicamentos que presentan los pacientes que acuden al servicio de urgencias en un hospital universitario del sur de Brasil, e identificar las posibles causas y los fármacos involucrados.

Método: La investigación siguió el modelo de estudio transversal, con una encuesta estructurada para la recogida de los datos. Se empleó el análisis de regresión logística múltiple para controlar posibles factores de confusión y establecer una asociación independiente entre la presencia de problemas relacionados con medicamentos y el número de éstos, la edad y el nivel educativo.

Resultados: Se entrevistaron 350 pacientes y la frecuencia de problemas relacionados con medicamentos fue del 31,6%. La ineffectividad cuantitativa se observó en el 30,9% de los casos. La principal causa de los problemas fue el régimen de dosificación inadecuado. El sistema de salud o los profesionales de la salud se identificaron como responsables en 66 casos (53,7%). El nivel educativo y el número de fármacos contribuyeron de forma independiente a la aparición de los problemas.

Conclusión: Los datos sugieren que un tercio de los pacientes que buscan atención en el servicio de urgencias del hospital donde se ha realizado el estudio lo hicieron por problemas relacionados con medicamentos, lo que refuerza la importancia de considerar a los fármacos como una posible causa de problemas de salud y la necesidad de promover un uso más racional de ellos.

© 2011 SESPAS. Publicado por Elsevier España, S.L. Todos los derechos reservados.

Palabras clave:

Problemas relacionados con medicamentos

Servicio de urgencias

Uso de medicamentos

Reacciones adversas a medicamentos

Atención farmacéutica

Introduction

Although many efforts have been made to enforce the rational use of drugs, several studies have reported drug-induced health problems.^{1–3} The most commonly mentioned factors involved

in these problems are the social pressures to which prescribers are subjected, the structure of the health system and pharmaceutical marketing.⁴ Patients also play an important role in this phenomenon, since they may agree to treatment and then show only partial adherence or may simply decide not to adhere to the treatment.⁵

The large-scale use of drugs may create situations that do not follow pharmacotherapeutic principles. These situations are classified as drug-related problems (DRPs).⁶ The first studies on the

* Corresponding author.

E-mail address: robertaan@yahoo.com (R.S. Andrezza).

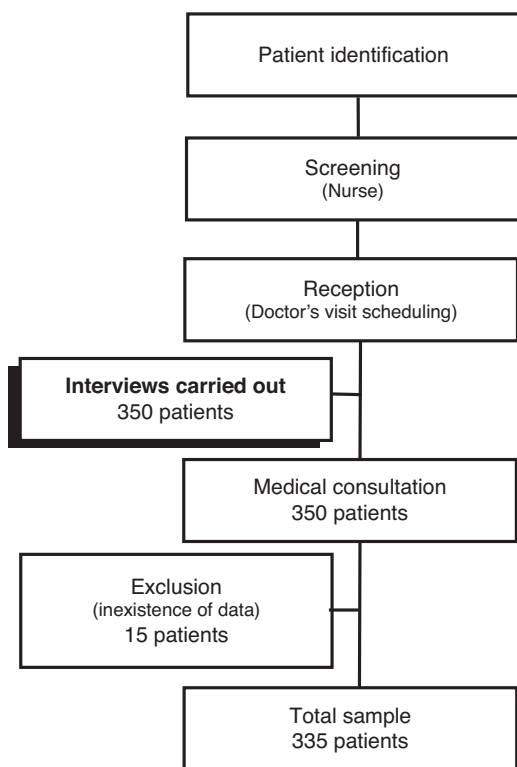


Figure 1. Location of the interviews carried out in the patient care flowchart.

subject date back to the early 1970s and those reporting this type of research in emergency rooms (ER) appeared in the following decade.

A recent study reported that around 90% of DRPs are preventable.⁷ The ability to prevent these events is essential to identify possible causes and structurally-related factors. Few published studies that have focussed on this issue. Therapy optimization aimed at preventing DRPs improves health, reduces morbidity and increases quality of life.⁸

Published studies report DRPs as a frequent cause of visits to emergency services and hospitalization^{8,9} and data on this topic are scarce in developing countries. The aim of the present study was to assess the frequency and types of DRPs in patients seeking emergency care in a teaching hospital in southern Brazil and to identify the possible causes and drugs involved.

Method

This cross-sectional study was conducted at the ER of the Hospital de Clínicas de Porto Alegre (Brazil) for 1 month, which provides emergency care to approximately 65,700 patients annually from Porto Alegre (63.9%) and from other areas (36.1%) in southern Brazil.¹⁰

A structured questionnaire was used to collect data. The development of this questionnaire has previously been published.¹¹ Data collection was performed by a properly trained and validated team of interviewers in three emergency care shifts (morning, afternoon and night) every day of the week for 20 days. The interviews were carried out as illustrated in the patient care flowchart (Fig. 1) before the patient was seen by a doctor. Data on the reasons for consultation, the basic illness, hospitalization, symptoms, measurements of blood pressure and blood glucose level were collected or confirmed in the emergency department records after the physician consultation. If the patient was hospitalized, the medical records were consulted.

Calculation of the sample size was based on a previous study² that estimated a DRP prevalence of 24.3% in an ER in Spain. Based on an annually-served population of 65,700 patients, a significance level of $p \leq 0.05$ and variation of 5%, the estimated minimum number of individuals needed for interview was 281. This study included patients older than 12 years who were capable of expressing themselves or who were accompanied by a caregiver. Caregivers answered all questions and were present at the medical consultation. When the patient could not remember any information during the interview, the questionnaire was completed later via a telephone contact.

The review board of our institution, which is accredited by the Office of Human Research Protections as an Institutional Review Board, approved the ethical and methodological aspects of the project, and all patients signed a written informed consent form to participate in this study.

DRPs were identified case by case, based on the classification of the Brazilian Pharmaceutical Care Consensus.¹² In line with the basic principles of pharmacotherapy, DRPs were classified by evaluating three distinct criteria of pharmacotherapy: indication, effectiveness and safety. Suspected adverse drug reactions (ADR) were classified according to Naranjo's algorithm.¹³ The causality of the remaining DRPs was inferred by using data from the questionnaire and the emergency department records.

To estimate interobserver variability, 67 random cases (20%) were analyzed by a second pharmacist. No divergence in classification was found.

Patients who were classified in the polypharmaceutic category¹⁴ were those who had used five drugs or more concomitantly for 10 days before seeking emergency care. The drugs were classified according to the Anatomical Therapeutic Chemical system.¹⁵ The analysis was performed using Epi Info® 6.0 and SPSS 18.0 software. A descriptive analysis using measures of central tendency and dispersion of the sample was performed. The magnitude of the associations was estimated by odds ratios (OR) with a confidence interval of 95% (CI95%). The chi-square test was used to determine statistical significance between proportions. To control for possible confounding factors and to establish an independent association between the presence of DRPs and the number of medications, age and educational level, a multivariate logistic regression analysis was performed. The model included variables with a p value of <0.20 .

Results

Sample characterization

Three hundred and fifty patients were interviewed, of whom 15 were excluded due to lack of data. Consequently, the final sample was composed of 335 patients (Fig. 1), who were predominantly female (65.7%) and white (76.7%). The mean age was 44.9 years ($SD = 19.2$). Most (61.4%) had elementary education and were from the metropolitan area of Porto Alegre (94.9%) (Table 1).

Drug-related problems

Of the 335 patients, 106 (31.6%; CI95%: 26.7–36.9) sought emergency care due to DRPs. A total of 123 DRPs were observed, representing 1.2 DRPs per patient, since 17 (16%) patients presented two DRPs. Univariate analysis showed that age, educational level and the amount of medication were significantly associated with the development of DRPs (Table 1). Multiple logistic regression was performed to evaluate the impact of age, educational level, and the number of drugs on the presence of DRPs. Age showed no correlation with the development of DRPs (OR = 1.14; CI95%: 0.65–2.11).

Download English Version:

<https://daneshyari.com/en/article/1074053>

Download Persian Version:

<https://daneshyari.com/article/1074053>

[Daneshyari.com](https://daneshyari.com)