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BRIEF REPORT

Optimisation of the prescription of medication for patients undergoing elective surgery

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KEYWORDS
Home pharmaceutical treatment;
Pharmaceutical care;
Therapeutic conciliation

Abstract
Objective: To draw up a document in which patients can note down their residential treatment and determine its usefulness. The level of compliance and assessment of the document can be quantified by the healthcare personnel.
Method: Initially the medical prescription process was analysed in the preoperative stage. Its usefulness was later evaluated, analysing the percentage of patients who could benefit from it, through a questionnaire for the healthcare personnel.
Results: A residential medication document was drawn up and included in the documentation process at the preoperative stage. From a sample of 350 patients, 76.0%took medication at home and 81.2%of those used the document. The health personnel rated its usefulness as 4.51 and the safety of it at 4.38 in a scale of 1 to 5. The time saved was valued at 4.37; 4 being a saving of between 0 and 5 minutes, and 5 being a saving of between 5 and 10 minutes.
Discussion: The home medication document could overcome the problem of knowing exactly the home medication itself, and this could be the first step in therapeutic conciliation. According to the assessment by the healthcare personnel, it improves the usefulness and the efficiency of the process. According to our data, the time saved by the medical staff and nursing personnel fluctuates between 93-310 and 122-339 hours per year, respectively. Computerised, up-to-date clinical records accessed by both primary and specialised care, could further optimise the prescription process of medication in the perioperative stages.

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KPALABRAS CLAVE
Tratamiento farmacológico domiciliario;
Atención farmacéutica;
Conciliación terapéutica

Optimización del circuito de prescripción de medicamentos en pacientes con cirugía electiva

Resumen
Objetivo: Elaborar un documento en el que los pacientes puedan anotar el tratamiento domiciliario y determinar su utilidad, así como cuantificar el nivel de cumplimiento y la valoración que del documento haga el personal sanitario.
Método: Inicialmente, se analizó el circuito de prescripción médica en el preoperatorio. Posteriormente, se valoró su utilidad, y se analizó el porcentaje de pacientes que podían beneficiarse mediante una encuesta al personal sanitario.
Resultados: Se editó un documento de medicación domiciliaria que se incluyó en el circuito de documentación del preoperatorio. De una muestra de 350 pacientes, el 76,0% tomaba medicación domiciliaria, y el 81,2% trajo el documento. El personal sanitario valoró su utilidad con un 4,51, y la seguridad en un 4,38, en una escala del 1 al 5. La diferencia de tiempo se valoró con un 4,37, en la que 4 supone un ahorro de entre 0 y 5 min., y 5, entre 5 y 10 min.
Discusión: El documento de medicación domiciliaria permitiría superar el problema del conocimiento exacto de la medicación domiciliaria, y podría ser el primer paso para la conciliación terapéutica. Según la valoración del personal sanitario, mejora la utilidad y la eficiencia del circuito. Según nuestros datos, el ahorro del tiempo del personal médico y de enfermería oscilaría entre las 93 y las 310 h/año y las 122 y las 339 h/año, respectivamente. La historia clínica informatizada y actualizada, y con acceso desde la atención primaria y la especializada, podría mejorar aún más el circuito de prescripción de medicamentos en el perioperatorio.

Introduction

Lack of knowledge concerning home treatment is one of the causes of errors in medication at the time of hospital admission, in particular in polymedicated patients and those with memory and/or communication problems. To ensure that the necessary medication is correctly prescribed in the hospital, a thorough and detailed knowledge of the full medical history is required.[1] Accurate knowledge of the patient's home treatment is the first step in therapeutic conciliation.[2,3]

However there are problems with the current context. Consequently, in the study performed by Cornish et al,[4] a discrepancy was noted between the treatment prescribed by the hospital doctor and the general practitioner in 53.6% of cases, and the most frequent is the omission of some drug in 43%-46%.[2,4] Gutiérrez et al[5] analyse prescription errors in an emergency department and cite lack of knowledge on the characteristics of the medication prescribed and unfamiliarity with the patients as causes.

In 2007, in the Traumatology Department of the Hospital Universitari Vall d'Hebron (TD-VH), 5534 surgical interventions (SI) were performed, 81.19% of which were scheduled. Many of the patients undergoing elective surgery are elderly patients, with an increased risk of co-morbidity and iatrogenesis, and some, moreover, have problems describing their home treatment.

For this reason, and before consultations with healthcare professionals in the Hospitalisation Units (HU) and external consultations, the Pharmacy Department assesses the need to know the home pharmacological treatment, and therefore avoid possible medication related problems (MRP) in hospital.

The main objective of the study was to prepare a document in which patients, their family members, or healthcare professionals in the primary care centres (PCC) could note the home treatment. The second objective was to determine the use of this document and quantify the level of compliance and assessment of the document on the part of healthcare professionals.

Method

The study was performed in 2 phases. During the first phase, the medical prescription process in the pre-operative period was analysed, to adapt and integrate the proposed document into the already existing system. The usefulness of the document was assessed during the second phase.

The analysis process began in 2003. Prescriptions for pharmacological treatment for elective surgery patients received over 2 weeks were analysed and all the incidents which, according to the pharmacists, could generate doubt or errors in the medication prescribed were recorded.

Taking into account the MRPs observed, a document was proposed. After analysis by a work group comprising anaesthetists, internists, traumatologists, and nurses in the HU, as well as pharmacists, this was called the home treatment document (HTD).

To assess the usefulness of this document in the second phase, first the percentage of patients that could benefit from the HTD was quantified, then compliance was analysed and, finally, the medical staff and nurses were questioned. The questionnaire included questions on the usefulness, patient safety, and time saved by the HTD.

For this purpose, a sheet was designed for the collection of the patients' demographic information. On this sheet it was noted whether the patient was taking medication and whether they had brought the home treatment document. Only "Yes" and "No" responses were allowed.

To determine compliance on the part of the patients, and based on the completed RMDs, the pharmacological regime was analysed, as well as the descriptions that could lead to doubt or errors in the hospital prescription.

Finally, the assessment of the HTD performed by the doctors and nurses, based on individual questionnaires, were analysed. After collecting the identification data for the person questioned and having indicated whether or not they were familiar with the HTD, several questions were asked concerning their usefulness, patient safety and on the time saved or lost in the event of no HTD. In the end, there was an opportunity to put forward suggestions: points in favour and against the use of the HTD and opinions on how this had changed the patient interview process.

Results

After several meetings, the so-called HTD was edited and approved by the area's medical director, then included in the pre-operative documentation.

The first section of the HTD explains its use and asks for compliance with the process. Below, there is a table where the pharmacological treatment should be noted: medication and regime, with recommendations on how this should be administered. On the back of the sheet, several examples of treatment help to ensure proper compliance. There is also a space to summarise, if necessary, the patient's pathological antecedents, or notes for the hospital doctor. With the exception of this end section, the original information was provided in the 2 official languages of the autonomous community (Appendix).

The HTD is included in the pre-operative documentation and is given to the patient along with the request for analytical tests, electrocardiogram, and chest x-rays. When the patient attends the pre-operative consultation, they must hand over the completed document, which will then be archived along with the patient's other medical documents.

To determine the usefulness of the HTD, 350 patients who attended a pre-operative consultation in June 2007 were asked to complete a questionnaire and the first 100 RMDs received were analysed. The average age (standard deviation) of the patients was 59 (18) years. Of these, 266 (76.0%) were taking medication at home, and of these, 216 (81.2%) brought the HTD, more women (83.1%) than men (78.5%). The average age (standard deviation) of patients taking medication was de 64 (15) years old, and that of those who brought the HTD, 65 (14) years old.

From the analysis of the 100 RMDs, it was observed that 86% were completed by patients or their family members and the remainder was the report edited in the primary care centre (PCC) that contained the information requested. A total of 17 contained some type of omission. Of the 501 medications noted, there was some sort of omission in 46: twenty-eight relating to dose, 11 to frequency, and both in 7. There were no omissions in those edited in the PCC.

Table 1 Assessment of the home treatment document on the part of healthcare professionals compared with the old system

	Doctors	Nurses	Total
Number questioned	33	17	50
Assessment of usefulness	4.34 (3-5)	4.82 (4-5)	4.51
Assessment of safety	3.72 (2-5)	4.06 (3-5)	3.84
Quantification of time difference	4.34 (3-5)	4.41 (2-5)	4.37

Values expressed as averages with interval (minimum-maximum).
In the assessment of usefulness and safety, the following was considered: 1: none; 2: little; 3: acceptable; 4: good; 5: very good. In the time assessment, the following was considered: 1: I lost more time; 2: a little (0-5 min); 3: the same; 4: I saved a bit of time (0-5 min); 5: I saved a lot of time (5-10 min).

Table outlines the assessment of the HTD on the part of the healthcare professionals in the different HUs in which the surgery patients were admitted. The questionnaire was completed by a total of 33 doctors (3 heads of departments, 17 consultants, and 13 residents) and 17 nurses in the different HUs. They were randomly selected although all the HUs offering elective surgery was represented. In terms of time, of the total number of healthcare professionals questioned, one nurse said that she wasted up to 5 min; 3 (2 doctors and 1 nurse) said that they neither saved nor lost time; 22 (17 doctors and 5 nurses) said that they saved up to 5 min; and 23 (13 doctors and 10 nurses) between 5 and 10 min. One doctor did not know and did not answer.

A total of 20 healthcare professionals (9 nurses and 11 doctors) added a comment on the HTD, some with more than one in their responses. There were 19 favourable comments on the HTD, where the reasons included: helps patient remember their treatment and reduces the possibility of errors: 14; time saving: 5; involves the patient: 2. There were 13 unfavourable comments: the patient could make a mistake: 2; it can be incomplete: 2; the doctor needs to look at it: 3; sometimes it replaces the initial interview: 2; recent treatment can be missing: 2. Two stated that they were neither for or against, and 2 said that the patients did not always bring it.

Discussion

The majority of professionals questioned confirmed that the implementation of the HTD improved the prescription of medication in patients undergoing elective surgery. Integrating it into the pre-operative system has helped compliance, since it is considered necessary along with the diagnostic tests requested.

The HTD solves the problem of lack of knowledge concerning the home treatment of some of our patients who have memory or communication problems. According to our data, 56.4% of patients undergoing elective surgery are over 65 and take home treatment. It is to be noted that this population presents a high risk of developing MRP and therefore tools must be developed to reduce this.[6]

The HTD can be the first step in therapeutic conciliation, as recommended by Gordon[2] and Cornish et al.[4] The risk factors established by Gutiérrez et al[5] (that the doctor does not have sufficient knowledge of the medication prescribed, or that they do not know the patient well enough, as is the case with surgical patients) make this particularly recommendable in a centre of our characteristics.

According to the assessment of the healthcare professionals questioned, the HTD improves the efficacy of the system, usefulness and safety, and is considered good or very good. It was also considered efficient, since it saves time, both during the consultation and in the HU, and 44% of the professionals questioned said that they saved some time (between 0 and 5 min) and 46% between 5 and 10 min.

Taking into account that in 2007, 81.19% of the 5534 SIs performed in the TD-VH were elective, and extrapolating the results of the interviews of 350 patients in our environment, of the 3415 patients with home treatment, 2773 could have used the HTD. To estimate the time saved following the implementation of the HTD, the minimum and least favourable values were calculated, in terms of time saved for healthcare professionals. The time saved by medical staff varied between 93 and 310 h/year ([2 doctors × 0 min/patients] + [17 doctors × (0-5) min/patients] + [13 doctors × (5-10) min/patients])/32 doctors × 2773 patients/year × 1 h/60 min, and that of the nursing staff between 122 and 339 h/year (time saved corresponds to 1 doctor and 1 nurse per patient).

According to the comments of the healthcare professionals included in the questionnaires, another aspect to be highlighted is that the HTD requires active involvement of the patients and/or their family members, since it helps them remember their treatment and reduces the possibility of errors.

However, the HTD also has limitations. It does not include modifications to the pharmacological treatment that may have been made between the pre-operative consultation and admittance. If we also take into account dose omissions (7%) or frequency (3.6%) observed in the RMDs performed by patients or their family members, there is no doubt that the edition of the home treatment regime by the PCC would be the best option to follow.

Another limitation is that it only obtains information for patients attending for scheduled surgery and not those admitted for emergency surgery.

It is hoped that soon, with computerised and up-to-date clinical histories, and with access from primary and specialist care centres, this will further improve the prescription of medication in patients when admitted to hospital.

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Appendix 1 Home treatment document, front and back.

Data

Space for the label

First surname

First surname

Second surname

Name | | | | | Date of birth Province | |

M H N | | | | | | | | | | | Sex |

Allergies

Vall d'Hebron
Hospital
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Pharmacy Department

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Pharmacological treatment

To inform the hospital doctor of the pharmacological treatment you are taking before admission and enable them to assess whether this should be continued during your stay, you need to provide us with the names of the medication, in clear writing. For this reason, we kindly ask you to complete this document. **To facilitate treatment on the first day of your stay in the Hospital, you are advised to bring your medication with you.**

On the back of the document, by way of example, you will find a description and follow-up of the treatments, and also, should you wish, you can add comments in the **Observations** section.

Space to indicate medication(s)

Medication[1]	Regime[2]

1 Provide the commercial name of the medication, that which is on the box, including milligrams, grams, units...

2 Note the time at which you take the medication, whether it is every 8, 12 hours…, or whether you take it with breakfast, lunch or dinner, or before you go to sleep.

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Examples of medication and regimes

Medication	Regime
Omeprazole, 20 mg	1 pill with breakfast
Amitriptyline, 25 mg	1/2 pill with breakfast and 1 pill at night
Ventolin, inhaler, 0.1 mg/inh	2 inhalations every 6 hours, if necessary
Haloperidol, 20 mg/mL, drops	5-5-10 drops, breakfast-lunch-dinner
Durogesic, 25 mcg/h, patch	1 patch every 72 hours; next dose January 1, at 12h
Nitroglycerin, 10 mg, patch	from 9 in the morning to 10 at night, every day
Digoxin, 0.25 mg	1 pill with breakfast, except Thursdays and Sundays
Xalatan, 0.005% eye drops	1 drop in each eye, at night
Co renitec, 20/12.5 mg	1 pill with breakfast

Observations

Patient or patient's doctor

Where possible, please provide a short summary of the patient's pathological antecedents.

Name and surname of doctor responsible

Doctor license number

|_|_|–|_|_|_|_|_|–|_|

Signature

Please bring this completed document to the pre-operative consultation so that the doctor can incorporate it into your clinical history.

Date of consultation

|_|_|_|_|_|_|