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Pharmaceutical guidance at discharge of patients prescribed enoxaparin

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ABSTRACT

OBJECTIVE

To verify whether there was pharmaceutical guidance for patients who received discharge prescriptions containing enoxaparin in the orthopedics and surgical clinic sectors of a large general hospital in the city of São Paulo, Brazil, and its influence on treatment adherence.

METHODS

This is a cross-sectional, retrospective and quantitative study. Data collection was performed through electronic medical records. Patients who were prescribed enoxaparin at the time of discharge were selected and the pharmaceutical orientation record was verified. In a second phase, it was verified whether these patients withdrew the medication from the Unified Health System. And finally, if these patients returned to the institution with any complaint related to the medication.

RESULTS

A total of 50 medical records with enoxaparin prescription at the time of discharge were analyzed. In 52% of the medical records, it was stated that the patients received pharmaceutical guidance. Of the total of 50 patients, 76% received their medication at the primary health care unit. Only 6% returned due to an adverse reaction, or because they did not know how to use the medication, or because they developed VTE (venous thromboembolism).

CONCLUSION

Patients who received pharmaceutical guidance at hospital discharge did not report VTE or doubts about treatment, which highlights the importance of discharge guidance provided by the clinical pharmacist for patients requiring extended thromboprophylaxis, actively contributing to patient safety and treatment effectiveness.

DESCRIPTORS

High. Pharmaceutical guidance. Prophylaxis. Venous thromboembolism. Enoxaparin.

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INTRODUCTION

Venous thromboembolism (VTE) can affect patients hospitalized for various clinical conditions that impair locomotion, or even in outpatient care[1]. Patients in the postoperative period are also prone to developing VTE. According to Chindamo et al. (2019), 37% of VTE cases occurring on an outpatient basis are in patients who were recently hospitalized, and 23% had undergone major surgery in the last 3 months[2]. Extended VTE prophylaxis, i.e., when the patient uses anticoagulants after hospital discharge, is extremely important to reduce these occurrences[3,4].

In VTE prophylaxis, extended after the surgical patient's discharge, there are risk factors that should be taken into account, such as obesity[5], active cancer, stroke, previous VTE, heart failure, chronic renal failure, puerperal women, age over 60 years, and family history of VTE[1,2].

The duration of extended prophylaxis in surgical patients is based on the Caprini score, in which the result is obtained from the sum of the patient's risk factors[2,4]. A score of 3 or 4 is classified as moderate risk with prophylaxis only during hospitalization, a score of 5 to 8, a high-risk patient with a recommendation of 7 to 10 days of prophylaxis, and a score greater than 8 classifies the patient as very high risk, and prophylaxis should be 30 days if there are no contraindications[2].

The clinical pharmacist, in addition to being an important member of the multidisciplinary team that contributes to patient safety, especially in the prevention of adverse events[6], can contribute greatly to this extended prophylaxis, even more so if anticoagulants with subcutaneous application, such as enoxaparin, are used. Pharmaceutical guidance helps patients with doubts about the application of the drug, explains the benefit that this treatment provides, and warns about possible risks that anticoagulants may bring. In other words, pharmaceutical guidance makes an enormous contribution to the effectiveness of extended VTE prophylaxis and to patient safety[7].

The objective of this study was to verify whether there was pharmaceutical guidance on the correct use of the medication for patients who received a discharge prescription containing enoxaparin, and later whether the patient returned to the unit due to an adverse reaction to the medication, or because he did not know how to use the medication, or even due to a VTE.

METHODS

This is a cross-sectional, retrospective and quantitative study. The study was carried out in a large public hospital in the southern zone of the city of São Paulo. Data were collected via electronic medical records from patients who received the discharge prescription with enoxaparin and who were hospitalized in the hospital's Orthopedics and Surgical Clinic sectors between July 2022 and December 2022.

Through the Soul MV (the institution's electronic medical record system), a search was carried out for patients who used enoxaparin while hospitalized in the aforementioned sectors. After surveying these patients, those with a prescription for extended prophylaxis were selected. A total of 50 patients who received enoxaparin prescriptions were selected. Next, we searched for pharmaceutical evolution in the patients' electronic medical records, recording the guidance on the correct use of the medication, and finally, if there was a return of the patient with any possible adverse reaction to the medication, if VTE occurred, or with doubts about the use of the medication.

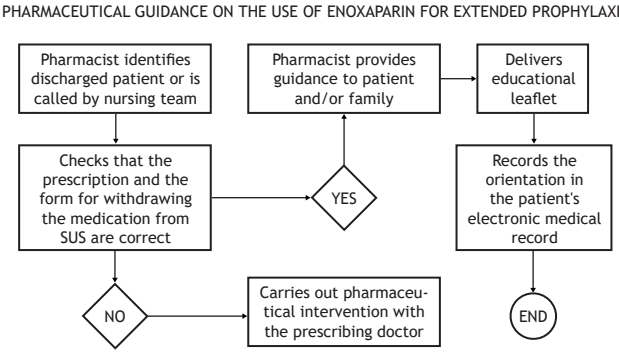
Subsequently, through the GSS (Health Systems Management) system of the city of São Paulo, it was possible to verify whether the patient had withdrawn the medication from the city's health care network.

RESULTS AND DISCUSSION

In the hospital where the study took place, pharmaceutical guidance is provided for patients who need extended VTE prophylaxis because they have undergone a surgical procedure that leads to reduced mobility. At hospital discharge, patients receive a medical prescription with enoxaparin.

When the patient is prescribed enoxaparin at hospital discharge, the pharmacist is informed by the nursing team, or the pharmacist himself identifies these patients in the system. As can be seen in Figure 1, the pharmacist must first verify that the prescription is correct and that the term required to withdraw the medication from the care network has been correctly filled out by the physician. Next, the patient and family member present at the time provide guidance.

Figure 1. Discharge guidance for patients prescribed enoxaparin. (Source: own authorship)



In the pharmaceutical orientation, the patient receives information about what anticoagulants are and VTE prophylaxis, the importance of using the medication, how the application should be performed, the correct way to dispose of it, avoiding accidents with sharp punctures, possible adverse reactions, and emphasizing that at any sign of bleeding seek emergency care. Finally, the pharmacist clarifies possible doubts, delivers the educational booklet on the use of enoxaparin (Figure 2), and informs possible units of the care network where the patient can pick up the medication. Subsequently, the pharmacist records in the electronic medical record that the orientation was carried out.

Figure 2. Educational leaflet for the correct use of enoxaparin. (Source: brochure provided by the Grajaú General Hospital).

In this study, we analyzed the medical records of 50 patients who received enoxaparin prescription for VTE prophylaxis after hospital discharge. The characteristics of these patients are shown in Table 1. The majority of patients, 54% (27), were male, 22% (11) were aged between 30 and 60 years, 16% (8) were under 30 years of age, and 16% (8) were over 60 years of age. Considering the 46% (23) female patients, 32% (16) were over 60 years old and 14% (7) were between 30 and 60 years old. There were no female patients under 30 years of age.

Table 1. Patient profile, age group x gender. who received the prescription of enoxaparin for VTE prophylaxis after hospital discharge.

	FEMALE		MALE	
	No	Percentage (%)	No	Percentage (%)
Under 30 years old	0	0%	8	16%
From 30 to 60 years old	7	14%	11	22%
Over 60 years old	16	32%	8	16%
Total	23	46%	27	54%

Considering the inpatient units, 58% (29) of the patients were hospitalized in the orthopedics unit, and 42% (21) in the surgical clinic.

The Caprini scale allows the classification of VTE risk through relevant factors such as age, gender, comorbidities, and others[1,2]. This classification is decisive for the indication of drug prophylaxis, such as the use of enoxaparin for post-discharge.

The VTE prophylaxis protocol at the hospital where the study was conducted is applied weekly by the medical team, using the Caprini scale for patients who are hospitalized in the Clinical Surgery and Orthopedics units, and it is possible to classify the patient as: very low risk, low risk, moderate risk and high risk, depending on the score generated.

According to the last protocol before discharge of the patients analyzed, 50% (25) were classified as high risk, 4% (2) moderate risk, 16% (8) low risk, and 30% (15) very low.

The dose of enoxaparin prescribed for extended VTE prophylaxis was 40 milligrams 1 time daily for all patients. As for the treatment time, 80% (40) for 30 days, 18% (9) for 15 days, and only 2% (1) with the treatment for 7 days. No prescription requiring pharmaceutical intervention was found in relation to dose, dosage, or duration of treatment.

In this study, 80% of the patients were prescribed for 30 days according to the hospital protocol. The Albert Einstein Hospital protocol8 for orthopedic surgical patients recommends the use of enoxaparin for a period of up to 35 days. This was a similar approach in both hospitals.

When performing a search in the electronic medical records for pharmaceutical evolutions indicating discharge guidance for patients with enoxaparin prescription, it was possible to identify pharmaceutical guidance for 52% (26) of the patients, and in 48% (24) of the patients there was no record of pharmaceutical guidance.

Analyzing the 48% (24) of the patients who did not have the pharmaceutical guidance for the use of enoxaparin in the electronic medical record, it was identified that 45.84% (11) of these patients were discharged on a weekend or holiday. During these periods, the institution has only the pharmacists on duty, primarily assigned to pharmaceutical logistics. Discharge guidance is one of the activities of the clinical pharmacist, and its absence during these periods may have actively contributed to a higher number of non-oriented patients.

In the pharmaceutical guidance, the patient is informed that enoxaparin is available free of charge by the Unified Health System (SUS), and which units can be used to pick up the medication.

Through the GSS (Health Systems Management) system of the city of São Paulo, a search was carried out with the patient's name to find out if the medication was dispensed in the public network.

Of the total number of patients prescribed enoxaparin after discharge, it was found that 76% (38) withdrew the medication at a primary health care unit, and 24% (12) did not. Thus, it is understood that most of the patients continued the treatment.

Checking the data of the patients who picked up the medication at SUS pharmacies, it was possible to verify that for 45% (17) of these patients there was pharmaceutical guidance at the time of hospital discharge, and another 55% (21) there was no record of pharmaceutical guidance in the electronic medical record.

Of the 24% (12) who did not pick up the medication at SUS pharmacies, 75% (9) received pharmaceutical guidance and 25% (3) did not receive pharmaceutical guidance at the time of discharge. There are some hypotheses that may explain why patients who received pharmaceutical guidance did not pick up the medication at SUS pharmacies, such as: the non-availability of the medication in the public network at the time of the search, the complexity of the treatment, taking into account that enoxaparin is an injectable drug and that many patients have a certain resistance to this type of ad-

ministration, and according to Viana (2019), extended VTE prophylaxis shows greater adherence when anticoagulant is prescribed with an oral route of administration compared to injectable medications[9]. Purchase in private pharmacies can also be considered, as this would not be dispensed in the public network. And finally, another hypothesis to be considered is that of these 75% (9), 66.7% (6) were male, which may have contributed to the non-withdrawal of the medication, because according to Costa-Junior (2016), men have a lower adherence to drug treatments[10].

Of the total number of patients prescribed enoxaparin at home, only 6% (3) patients returned to the institution due to a drug-related complaint, adverse reaction, not knowing how to use the medication, or non-effectiveness of VTE prophylaxis. These patients returned due to bleeding, doubt about the use of the drug, and finally, one of the patients developed venous thrombosis. Of these three patients who returned to the hospital, two had not received pharmaceutical advice.

The following are the cases of the two patients who returned to the hospital and did not receive pharmaceutical guidance at hospital discharge:

In the first case, a 72-year-old female patient who returned to the institution accompanied by her daughter 17 days after hospital discharge for a scheduled appointment due to the surgical procedure performed, however, according to the medical evolution, the daughter reported doubts about the application of enoxaparin. There was no report from the physician informing whether or not the patient had already started extended prophylaxis in these 17 days, even though she had doubts about the application.

In this case, the patient did not receive the pharmaceutical guidance at the time of discharge, and according to the GSS, she withdrew the medication for 30-day prophylaxis as prescribed. The fact that this patient was not counseled by the pharmacist, as well as her daughter, since the counseling is also carried out with family members and caregivers, may have caused an incorrect application of the medication during this period, or even non-adherence to the treatment, thus compromising the patient's safety and the efficacy of the treatment. However, according to the electronic medical record, the patient had a favorable outcome in the postoperative period, with no complications afterwards.

In the second case, a 79-year-old female patient who had undergone a surgical procedure due to a foot fracture 2 months earlier, returned to the institution by her own means, and according to the medical evolution, the patient reported that for 2 days she had been feeling the left lower limb more swollen, associated with heat, redness and pain on palpation. The doctor confirmed the diagnosis with ICD-182, corresponding to embolism and venous thrombosis. Rivaroxaban was prescribed, with the administration of 15 milligrams every 12 hours for 21 days, and then 20 milligrams 1 time a day continuously.

This patient is part of the 48% who did not receive pharmaceutical guidance, and also of the 45.84% who were discharged on the weekend or holiday. In the electronic medical record, there were no reports on whether the patient had performed extended VTE prophylaxis correctly. However, according to the GSS, the drug was made available with treatment for 30 days.

The hypothesis that lack of pharmaceutical guidance may have contributed to the outcome of venous thrombosis should be considered. According to Chidamo et al. (2019), for better adherence to thromboprophylaxis and fewer post-discharge events, dehospitalization strategies are necessary, with guidance at the time of discharge and educational materials for patients and family members being items to be considered[2].

Finally, a 33-year-old male patient returned two days after hospital discharge with bleeding from the surgical wound in the right lower limb. A possible adverse reaction to enoxaparin has not been reported in medical or other professionals, however, according to the drug's package insert, bleeding is classified as a very common adverse reaction, occurring in more than 10% of patients who use the medication prophylactically after surgical procedures[11]. There were also no evolutions with the patient's report on the beginning of VTE prophylaxis after discharge, but according to the search carried out in the GSS, this patient withdrew the medication in the public health network, which reinforces the hypothesis of adverse reaction to enoxaparin.

According to the electronic medical record, there was no suspension of the medication, after changing the dressing, the patient was discharged on the same day, and later continued with the scheduled returns without new bleeding episodes.

This patient received pharmaceutical guidance, which may have contributed to his return to the institution, as it is part of the guidance to explain that bleeding is a possible adverse reaction to enoxaparin, and that at any sign of bleeding he should seek a health service.

The results show that discharge guidance for surgical and orthopedic patients who will use home enoxaparin is important for better adherence. The oriented patient has fewer doubts, knows how to go to the SUS pharmacy, how to use the drug, the possible adverse reactions and what to do in these cases. Thus, this patient can actively participate in their care and ensure the effectiveness of the treatment.

The research was limited to the institution's electronic medical records, so it was not possible to identify whether there were any patients who complained and sought another health service, since there is no single system for the electronic medical records of SUS users.

Another limitation to be considered in relation to the number of patients referred is the hypothesis that the pharmacist may not have evolved in the system to provide pharmaceutical guidance before the patient record was closed, because there was no impediment to the closure of the system without this information, thus generating a greater number of non-advised patients.

CONCLUSION

Even though it is not possible to state that 52% of the patients advised adhered to extended prophylaxis, according to the research, there were no reports of VTE and no doubts regarding the use of the drug in this group. Evidencing the importance of pharmacotherapeutic follow-up and discharge guidance performed by the clinical pharmacist for patients who require thromboprophylaxis in the postoperative period, actively contributing to patient safety and treatment effectiveness.

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