

# A Medical Error in Emergency Department: Intravenous Hydrotalcite Syrup

*Acil serviste tıbbi bir hata: Hidrotalsit şurubunun intravenöz enjeksiyonu*

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## SUMMARY

In developing countries, vital errors seldom do happen especially when overcrowding of emergency units is combined with inexperienced and careless health care staff. In our case report, we present a case who was given intravenous injection of an orally used antacid, hydrotalcite, presented with respiratory distress, edema in her uvula and face as well as edema, tenderness and ecchymosis in her arm where the injection was given.

**Key words:** Allergic reaction; hydrotalcite; medication error; iatrogenic.

## ÖZET

*Gelişmekte olan ülkelerde acil servis yoğunluğu ile tecrübeli ve tıbbi bilgilere sahip sağlık personeli sıkıntısı birleştiğinde hayati öneme sahip hatalar nadir de olsa yapılabilmektedir. Bu olgu sunumunda, oral olarak kullanılan bir anti-asit olan hidrotalsitin intravenöz enjeksiyonuna maruz kalmış bir hastanın uvula ve yüz ödemi ile enjeksiyon yapılan kolda ödem, hassasiyet ve ekimoz ile başvurusu bildirildi.*

**Anahtar sözcükler:** Alerjik reaksiyon; hidrotalsit; tıbbi hata; iatrojenik.

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## Introduction

In developing countries, vital errors seldom exist when overcrowding of emergency departments (ED) is combined with particularly inexperienced and careless health care staff. These medication errors include inadequate knowledge about allergic reactions, inappropriate route or dose of the drug, wrong drug or wrong formulation chosen.<sup>[1]</sup> Here, we present a case that developed angioneurotic edema due to a intravenous administration of a drug which was actually needed to be applied orally.

## Case Report

A 23-year-old woman admitted to the emergency department of a state hospital with complaints of abdominal pain and vomiting. After initial examination, gastritis was diagnosed and oral antacid (Hydrotalcite, Talcid®) was ordered. A nurse had prepared the drug and put it into an injection syringe. However because of another order given by the doctor, she was unable to attend the patient. So, she requested help from a sanitary servant. This individual mistakenly injected 5 mL of hydrotalcite syrup intravenously. When the mistake was emerged, the patient was transported to the ED of our university hospital.

Upon arrival to the ED, she was conscious, oriented and cooperative. She had complains of respiratory distress and abdominal pain. Her vital signs were all within normal range except mild sinus tachycardia (110 beats/min). Initial examination revealed moderate edema on the face and uvula. Edema, tenderness and ecchymosis were present on her left wrist where the intravenous injection was applied. There was also epigastric tenderness and bronchospasm noted. Laboratory and imaging studies were all normal except INR (1.55) and leucocytosis (13500/ $\mu$ L) values.

The patient was treated with 0.25 mg adrenaline (subcutaneous), combivent nebule (ipratropium bromide 20  $\mu$ g, salbutamol sulfate 120  $\mu$ g), prednisolone IV (1 mg/kg), pheniramine 45 mg IV (Avil® 2 ml amp) and supportive oxygen and hydration therapy. After 12-24 hours follow up, the symptoms resolved. She was discharged with no residual complication.

## Discussion

Medication errors in the hospitals are not uncommon even in the developed countries.<sup>[2]</sup> A study from the USA reported that the rate of deaths from medication errors has always

been particularly large for outpatients than for inpatients, and this rate has increased substantially in recent years from 3.0 to 6.5.<sup>[3]</sup> When overcrowding in EDs combined with inexperienced and careless health care staff, vital adverse events can happen.

In a case reported by Kazi et al.,<sup>[2]</sup> 50 ml of liquid paraffin was applied intravenously to a woman with 32 weeks gestation and was hospitalized due to intrauterine ex. Her condition improved and she was discharged from hospital after 12 days of vigorous treatment including mechanical ventilation with positive end-expiratory pressure, an emergency hysterotomy to avoid the complications of intrauterine death, 3 cycles of plasmapheresis and ultimately bronchoalveolar lavage. Our case was lucky because fatal reaction did not occur and she responded well to medical therapy.

Besides iatrogenic mistakes, suicidal intravenous applications may also occur rarely. The intravenous injection of methylphenidate hydrochloride (crushed Ritalin tablets) resulted in emphysema on pulmonary talcosis in one case.<sup>[4]</sup> Another patient attempted suicide by injecting hydrochloric acid into himself from his inguinal area, resulting in total occlusion of the external iliac artery, requiring disarticulation of the hip.<sup>[5]</sup> In another case report, intravenous injection of hydrochloric acid didn't affect the deep structures other than the vein and only a small area of surrounding structures was affected.<sup>[6]</sup> In the present patient, there was ecchymosis, edema and tenderness on the extensor region of her hand where the drug was injected. The signs on her arm were compatible with aseptic thrombophlebitis. Elevation and cold application to the extremity was performed, no infection occurred in the follow up.

## Conclusion

In recent years, ED facilities have been improved in Turkey. However, when the overcrowding of the EDs is taken into consideration, medication errors might be seen as unavoidable. It is important to arrange emergency admittances by means of an effective triage and to improve the knowledge and experience of medical personnel through continuous education. Intravenous injection of hydrotalcite syrup instead of oral route may cause mild anaphylactic reaction and local thrombophlebitis.

## References

1. Akalın HE. Medication errors. *Ankem Derg* 2004;18:10-1.
2. Kazi WA, Siddiqi R, Jafri SA. Intensive care management after inadvertent intravascular injection of liquid paraffin. *J Coll Physicians Surg Pak* 2007;17:356-8.

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3. Phillips DP, Christenfeld N, Glynn LM. Increase in US medication-error deaths between 1983 and 1993. *Lancet* 1998;351(9103):643-4.
  4. Stern EJ, Frank MS, Schmutz JF, Glenny RW, Schmidt RA, Godwin JD. Panlobular pulmonary emphysema caused by i.v. injection of methylphenidate (Ritalin): findings on chest radiographs and CT scans. *AJR Am J Roentgenol* 1994;162:555-60.
  5. Hsieh CH, Lin GT. Corrosive injury from arterial injection of hydrochloric acid. *Am J Emerg Med* 2005;23:394-6.
  6. Ikizceli I, Avsarogullari L, Durukan P, Sozuer EM, Kilic S. Intravenous self-injection of hydrochloric acid: case report. *Akademik Acil Tıp Dergisi* 2007;5:7-8.