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Case Report

Anaphylaxis after intravenous infusion of dexketoprofen trometamol

Sertac Guler*, Ilyas Ertok, Nurdan Yilmaz Sahin, Hayri Ramadan, Yavuz Katirci

Department of Emergency Medicine, Ankara Training and Research Hospital, Ankara, Turkey

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ABSTRACT

Dexketoprofen trometamol (DT), a nonsteroidal anti-inflammatory drug, is a highly water-soluble salt and active enantiomer of rac-ketoprofen. Its parenteral form is commonly used for acute pain management in emergency departments of our country. Side effects such as diarrhea, indigestion, nausea, stomach pain, and vomiting may be seen after the use of DT. Anaphylactic shock (AS) secondary to infusion of DT is very rare and, to our knowledge, it is the first case report describing this side effect. This case report was presented to emphasize that AS may be seen after the use of DT.

1. Introduction

Dexketoprofen trometamol (DT), a nonsteroidal anti-inflammatory drug, is a highly water-soluble salt and active enantiomer of rac-ketoprofen.[1] It is licensed in a number of countries. Oral DT was approved in the European countries through a Mutual Recognition Procedure in 1998 and parenteral formulation in 2002.[1] Parenteral DT is widely used in acute pain management in the emergency department (ED) settings.[2–4] Although diarrhea, indigestion, nausea, stomach pain, and vomiting are described as common adverse drug reactions in the product information of DT, anaphylactic shock (AS) secondary to use of DT is very rare with an incidence of <0.01%.[5] Here, we present an instance of AS occurring after intravenous (IV) infusion of DT and, to our knowledge; this is the first case report of this association.

2. Case presentation

A 43-year-old female patient was admitted to the ED with a complaint of right flank pain. The patient had a medical history of urological stone disease, but had not been taking any drugs regularly. The patient denied any drug allergy history. She had no history of any alcohol, substance, or tobacco use. In the physical examination (PE), there was costovertebral angle tenderness in the right flank region. The rest of the PE revealed no pathology. She stated that this pain was identical to the previous renal colic pain. Bedside renal ultrasonography revealed dilatation in the right urinary structures but no urinary stone. It was determined that the patient was suffering from renal colic. The patient was taken to the observation unit and then 50 mg of DT (Arveles® 50 mg/2 ml Ampul, UFSA İlaç) was administered at a 10-min IV infusion for pain management. During infusion, she developed flushing in the face and neck, confusion, tachypnea, tachycardia (pulse rate: 150 beats per minute), hypotension (blood pressure: 70/30 mmHg), and uvular edema; so she was diagnosed as having AS. Infusion was stopped, and we administered adrenaline 0.5 mg intramuscularly and pheniramine maleate 45.5 mg (Avil® 45.5 mg/2 ml, Sandoz) intravenously. An additional IV line was established on the other upper extremity, and a saline solution was given through both of them. The patient's symptoms declined and her clinical condition improved in the following hours. The dermatology department was consulted. The dermatologist prescribed dual antihistaminic therapy and suggested observation of the patient. The patient was discharged after a 12-h follow-up in the observation unit. She was given the information that she has a severe allergy to DT.

3. Discussion

Hepatic injury with neutropenia, thrombocytopenia, and acute kidney injury due to massive rhabdomyolysis have been reported previously related to the use of DT perorally.[6,7] To our knowledge, the case presented here is the first instance in the literature of AS after the use of DT intravenously. Parenteral DT is widely used in

* Corresponding author.
E-mail address: drsertacguler@gmail.com (S. Guler).
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acute pain management in the EDs.[2–4] Parenterally or orally administered DT has a good tolerability profile and high analgesic potency.[1,8,9] Common adverse effects of DT include diarrhea, indigestion, nausea, stomach pain, and vomiting.[5] Besides nonspecific allergic reactions like dizziness, rash, skin eruptions, and vomiting, AS may also be seen.[5] Although the probability of AS after IV infusion of DT is <0.01%, it is not clear whether the risk is smaller when it is given through the peroral route.[5] It has been reported that dexketoprofen pharmacokinetics following IV and intramuscular routes allow for a potential advantageous rapid switch to the oral formulation.[10] However, there is not any controlled clinical study showing that allergic reactions can be reduced by choosing the oral administration instead of the IV administration. Intravenous DT administration is commonly used in acute pain management in our ED. Allergic reactions even AS may develop after the use of DT intravenously.

The clinical symptoms of the anaphylaxis varies from urticaria, edema of lips and uvula, dizziness, cough, and vomiting to stridor, wheezing, respiratory distress, hypoxia, hypotension, and even death.[11] Edema of the uvula as well as dyspnea, confusion, and hypotension were present in our patient.

The presented case is important because the patient's symptoms, which occurred after the use of DT intravenously, are consistent with AS. In our case, Naranjo's adverse drug reaction causality scale score was calculated as 6, which means that a causal relation between the drug and an adverse reaction is “probable”.[12] Possible limitations of the causal relation are not being able to measure DT levels in any body fluid sample and not having the chance to administer the drug to monitor if the adverse reaction occurs again (re-challenge).

After the airway, breathing, and circulation are checked and secured, an adult patient with AS was treated with 0.3–0.5 mg adrenaline (1:1000 solution) by intramuscular injection.[11] Adrenaline was given intramuscularly and pheniramine maleate was given intravenously in our patient. Edema of uvula and flushing in the face and neck had subsided, and tachycardia, hypotension and confusion were resolved during follow-up period. The patient was discharged from ED without any sequela.

In conclusion, DT is commonly used intravenously in acute pain management in the ED. Although it is rarely seen, AS may develop after IV use of the DT. Emergency medicine physicians should remember that there is some risk of development of AS in patients treating DT intravenously.

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