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A Die Due to Ceftriaxone-A Case Report

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Ceftriaxone is a commonly used third-generation cephalosporin that has antimicrobial activity against many gram-positive and gram-negative organisms. Generally, ceftriaxone is a safe antibiotic. A die of 49-year-old female patient due to administration of intramuscular ceftriaxone has been reported and literature reviewed.

Key words: Ceftriaxone, death, antibiotic, third generation cephalosporin

CASE REPORT

A 49 year old woman was referred emergency to Khatam-Alanbia hospital due to cardio respiratory arrest. She was drug abuse for 30 years and history of hematuria due to nephrolithiasis since 3 years ago. Also she had history of hypertension and palpitation since 6 months ago. She had no history of drug sensitivity; one week ago she was treated in outpatient clinic with ceftriaxone (1.0 g/BID) due to pyelonephritis. Four injections have been done without any problem, after the fifth injection the patient become unconscious and cardio respiratory arrest. She transferred immediately to emergency room and CPR was done and the patient was resuscitated, then she underwent mechanical ventilation and cardiovascular monitoring. The status of the patient were; coma, GCS = 3, unstable hemodynamic, without spontaneous respiration, then become convulsion which controlled by thiopental due to refractory to current medication. The patient has gross hematuria and the CK_{MB}, LDH and AST were higher than normal. Other biochemical tests, electrolyte and hematological tests were normal. The x-ray showed the infiltration of inferior lung lobes. The brain CT-scan revealed the edema. The patient treated due to hypoxic encephalopathy and aspiration pneumonia. Unfortunately, the patient died after 5 days.

DISCUSSION

Ceftriaxone is a third generation cephalosporin frequently used in clinical practice for various infections in all age groups. However, it is associated with life threatening complications such as anaphylaxis and potentially dangerous complications like cholestasis and hypoprothrombinemia. Ceftriaxone is widely used for treating infection during childhood. The kidneys eliminate approximately 33-67% of this agent and the remainder is eliminated via the biliary system. Ceftriaxone may bind with calcium ions and form insoluble precipitate leading to biliary pseudolithiasis (Avci *et al.*, 2004). Ceftriaxone has antimicrobial activity against many gram-positive and gram-negative organisms. Generally, ceftriaxone is a safe antibiotic (Bickford and Spencer, 2005). It is known to induce reversible precipitates in the gallbladders of adults and children (Wen *et al.*, 2004). It has been reported hepatobiliary abnormalities secondary to ceftriaxone use (Rivkin, 2005; Vega *et al.*, 1999) and also induced cholestasis in a neonate (Ravisha and Godambe, 2004). Ceftriaxone-induced nephrolithiasis and biliary pseudolithiasis (Tasic *et al.*, 2005). Ceftriaxone may be considered as an alternative for treatment of early syphilis in pregnancy (Zhou *et al.*, 2005).

Biliary pseudolithiasis has been reported in patients who received ceftriaxone therapy. In addition to biliary sludge formation occasional reports of ceftriaxone-induced nephrolithiasis have been published. In general, these adverse effects will develop after seven to ten days of treatment. We report on a seven-year-old boy with ceftriaxone-associated biliary pseudolithiasis and nephrolithiasis four days after initiation of treatment. Patients receiving a high dose of ceftriaxone and developing colicky abdominal pain should be considered for ultrasound and a change in antibiotic therapy if appropriate (De Moor *et al.*, 1999).

A 5 year old girl with no underlying immune deficiency or hematologic disease was treated with a combination of ceftriaxone and ampicilline-sulbactam for pneumonia. On the ninth day of the therapy, she developed oliguria, paleness, malaise, Immune Hemolytic Anemia (IHA) and Acute Renal Failure (ARF). Laboratory studies showed the presence of antibodies against ceftriaxone. Acute Interstitial Nephritis (AIN) was diagnosed by renal biopsy. The patient's renal insufficiency was successfully treated with peritoneal dialysis without any complications. The patient recovered without any treatment using steroids or other immunosuppressive agents (Demirkaya *et al.*, 2006). In this study we report a die due to ceftriaxone.

CONCLUSIONS

Clinicians should be aware of the possibility of anaphylaxis occurring with the ceftriaxone.

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