

A Case of Suspected Hepatic Transaminitis caused by Ceftolozane-Tazobactam and Tigecycline

Ching-Yi Liu¹, Yueh-Feng Wen³, Yun-Shin Hung², Yu-Huey Chang¹

¹ Pharmacy Department, National Taiwan University Hospital Hsinchu Branch, Hsinchu Taiwan

² Nursing Department, National Taiwan University Hospital Hsinchu Branch, Hsinchu Taiwan

³ Division of Thoracic Medicine, National Taiwan University Hospital Hsinchu Branch, Hsinchu Taiwan

Introduction

We reported an adverse drug reaction of hepatic transaminitis caused by a novel combination antibacterial ceftolozane-tazobactam and tigecycline.

Case report

A 69 years old male was admitted for the treatment of community-acquired pneumonia. He had past history of left middle cerebral artery territory infarction, intracerebral haemorrhage, nasopharyngeal carcinoma. He had radiotherapy-related hypothyroidism and hearing impairment. Other past history include normocytic anaemia, polyclonal gammopathy and malnutrition. He presented to emergency department due to fever with chills, productive cough with green-coloured sputum. He was diagnosed with community-acquired pneumonia with multiple pathogens, *Mycoplasma pneumoniae*, *Streptococcus agalactiae*, *Klebsiella pneumoniae* and *Escherichia coli*. He later underwent bronchoscopy and bronchial washing which yielded Carbapenem-resistant *Pseudomonas aeruginosa*. Levofloxacin was empirically prescribed then switched to ceftolozane/tazobactam because of susceptibility testing. Tigecycline was also prescribed for similar duration as ceftolozane-tazobactam. Alanine aminotransferase (ALT) increased to 184 one week after ceftolozane-tazobactam initiation, and on the 9th day of treatment his alkaline phosphatase (ALP), aspartate aminotransferase (AST) and ALT were 141, 185 and 432, respectively.

Ceftolozane-tazobactam was stopped on the 9th day of treatment and tigecycline was discontinued a few days before it. Three days post cessation of ceftolozane-tazobactam his ALP, AST and ALT were 111, 67 and 225. It slowly dropped over the course of hospital stay.

Discussion

Both ceftolozane-tazobactam and tigecycline have the potential to cause abnormal hepatic function tests.

The incidence of tigecycline causing an increase in serum ALT, ALP and AST is 5%, 3%, and 4% respectively. According to the trial ASPECT-NP, which compared ceftolozane-tazobactam versus meropenem for treatment of nosocomial pneumonia, showed that abnormal liver function tests were the most commonly reported treatment-related adverse events with ceftolozane-tazobactam, occurred in 3% of the patients.

Conclusion

Pharmacist needs to remain vigilant and cautious when patient is treated with drugs that have the potential to cause adverse drug reactions and especially when multiple drugs with similar adverse reaction profile are used concurrently.

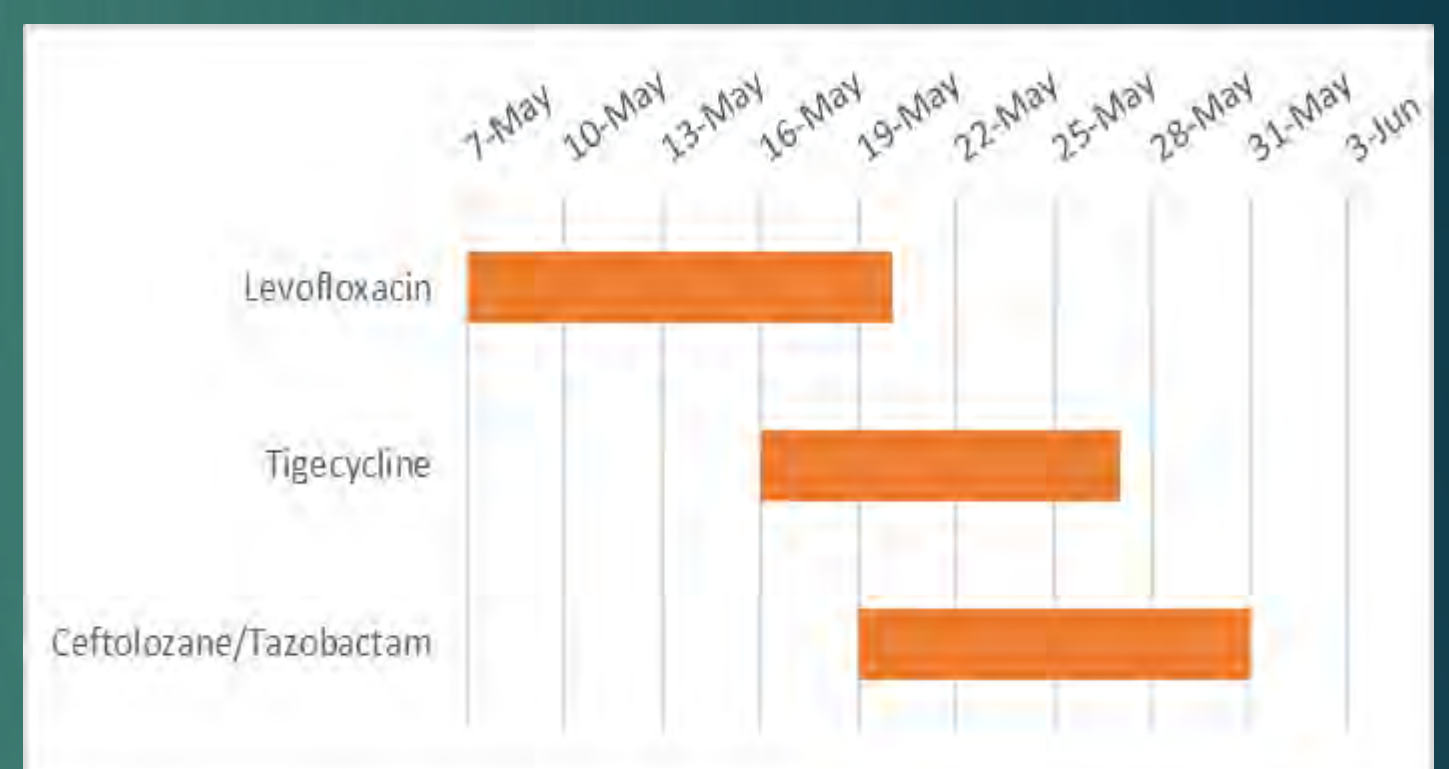


Figure 1. Possible antibiotics causing hepatic transaminitis during the month of May

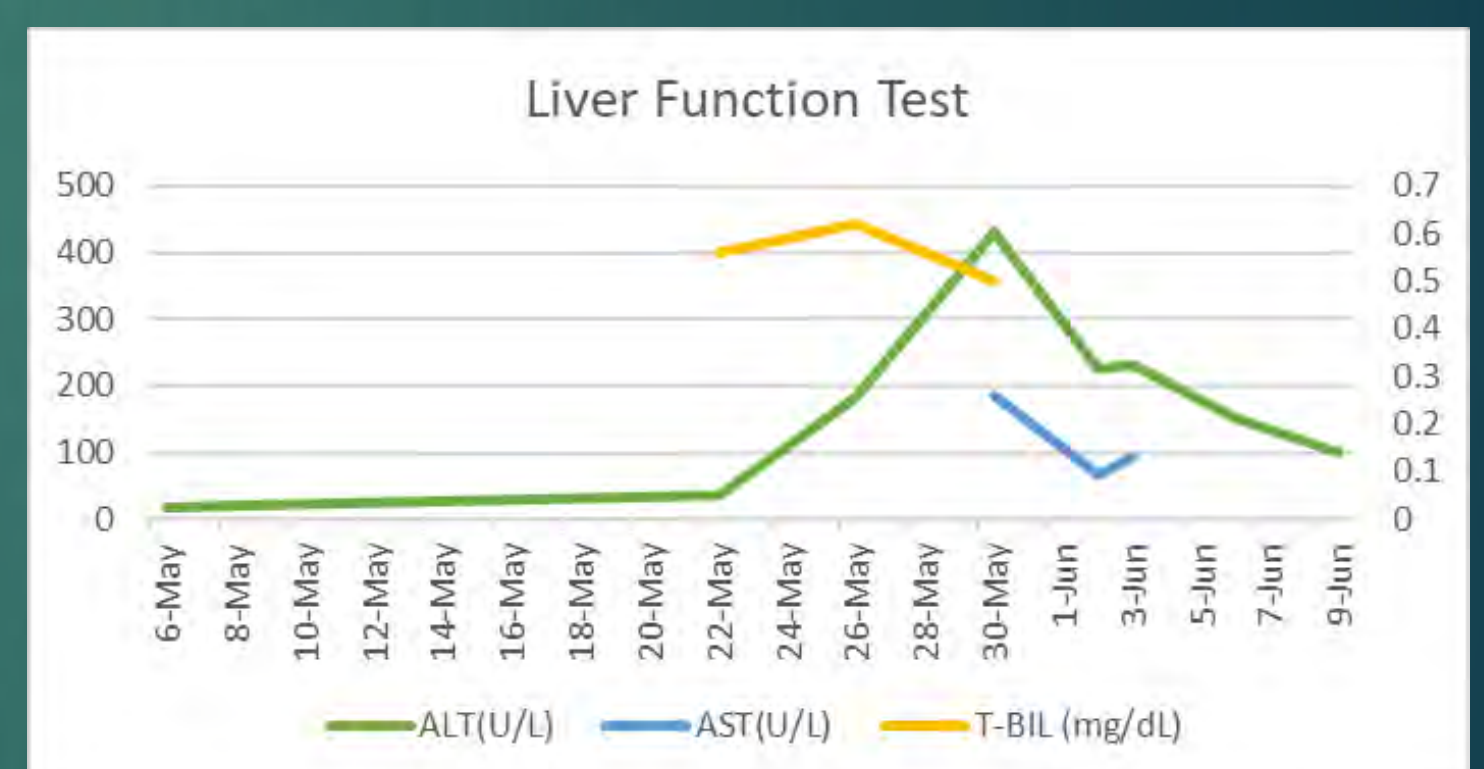


Figure 2. Liver function test

References

1. Lexicomp. (n.d.). Tigecycline: Drug information. UpToDate.
2. Ceftolozane-tazobactam versus meropenem for treatment of nosocomial pneumonia (ASPECT-NP): a randomised, controlled, double-blind, phase 3, non-inferiority trial. *The Lancet. Infectious diseases*, 19(12), 1299–1311.

