



## **A case of beta lactam-induced visual hallucination**

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We present a case of a 58-year-old man who experienced marked visual hallucination as a result of the use of ertapenem.

### **Case report**

Mr F is a 58-year-old man who was admitted with episodes of marked nocturnal visual hallucination, following his recent discharge from the orthopaedic service some 2 weeks previously for management of a recurrent hip wound infection following multiple operations for a femoral fracture a year ago.

Multiple resistant organisms were cultured from the wound and he was commenced on a course of ertapenem and discharged. Post discharge, he experienced marked nocturnal visual hallucinations on a daily basis. On multiple occasions, the presence of his close friends was perceived as real and he engaged in sensible conversation, only to notice their actual absence after a brief period of time.

Others episodes included seeing text messages on his switched-off cell phone, and pouring tea into an absent cup, again, noted by the patient shortly afterwards. These were also well noted by family members and were initially thought to be generalised “confusions”, to the degree that the patient was constantly unsure if he was hallucinating or not. He was not delusional, remained conscious throughout and recalled these episodes in vivid detail as real events, which caused significant distress to him and the family.

These symptoms were most marked some 4 hours post dosage of ertapenem (once daily intravenously administered by the district nurse), improved the following day and recurred with repeated dosage at approximately the same time each day. He had no other specific complaints and no psychiatric history. Relevant medical histories include coeliac disease, osteoporosis and chronic liver disease. His only other medications were nadalol and alendronate.

On examination he was alert, orientated with no altered sensorium. No focal neurology was noted and there was no evidence suggestive of hepatic encephalopathy. A subsequent CT head scan was also unremarkable.

He was managed on the medical ward and continued to experience daily episodes of visual hallucination obvious to ward staff. Haloperidol was commenced with no symptomatic improvement despite repeated dosage. No other causes were found the following week, when psychiatric consultation was initially contemplated. Ertapenem was eventually suspected and was withheld for 2 days, when improvement was noticed by the patient. It was reintroduced at a lower dosage, but almost identical symptoms recurred shortly thereafter.

Following consultation with the clinical microbiologist, it was eventually discontinued and changed to amikacin. Marked improvement was noted and

eventually the rapid complete resolution of symptoms. The patient had no further episodes since and was subsequently discharged.

## Discussion

Ertapenem is a potent, broad spectrum beta lactam antibiotic of a sub class known as carbapenem and is commonly used for mixed aerobic and anaerobic polymicrobial infections.<sup>1</sup> Hallucination is a rare adverse event, but generalised altered mental status has been documented that ranges between 3.3 to 5.1%.<sup>2</sup> A case of tactile hallucination has been report in the United States.<sup>3</sup> However, the case presented here is the only case of nocturnal visual hallucination related to ertapenem reported to the New Zealand Centre for Adverse Reactions Monitoring to date.

Mr F experienced marked symptoms on a daily basis shortly after commencing ertapenem, which occurred at specific time of the day that appeared to coincide with symptomatology. The subsequent reintroduction resulting in recurrence of almost identical symptoms, and a complete resolution shortly after its termination, are highly suggestive of their association.<sup>4</sup>

Ertapenem related visual hallucination is a rare but important adverse effect and is a frightening and difficult experience for the patient and family. It can be difficult to recognise and may easily be mistaken as being of non-organic origin. Consequently, a systematic review of patients' medications, with consideration for appropriate adjustment, is of crucial importance.

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