Kobe University Repository : Kernel

PDF issue: 2025-12-05

Cefepime-induced encephalopathy

Kenzaka, Tsuneaki

Matsumoto, Masanori

(Citation)
BMJ Case Reports,2018:bcr2017-223954

(Issue Date)
2018

(Resource Type)
journal article

(Version)
Version of Record

(Rights)
© BMJ Publishing Group Ltd (unless otherwise stated in the text of the article) 2018. All rights reserved. No commercial use is permitted unless otherwise expressly granted.
This is an Open Access article distributed in accordance with the Creative Commons…

(URL)
https://hdl.handle.net/20.500.14094/90005772

OPEN ACCESS

Cefepime-induced encephalopathy

Tsuneaki Kenzaka,[1,2] Masanori Matsumoto[2]

[1]Division of Community Medicine and Career Development, Kobe University Graduate School of Medicine, Kobe, Japan
[2]Department of Internal Medicine, Hyogo Prefectural Kaibara Hospital, Tanba, Japan

Correspondence to
Professor Tsuneaki Kenzaka, smile.kenzaka@jichi.ac.jp

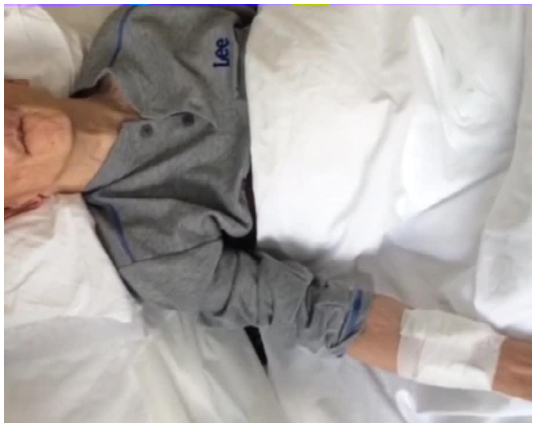
Accepted 3 January 2018

DESCRIPTION

A 61-year-old man has been unable to leave his bed since being diagnosed with cerebral palsy at the age of 2 years. He is fed via a gastrostoma and has previously contracted aspiration pneumonitis three times. He has had no history of seizures or myoclonic movements until the time of hospitalisation. He visited a physician with complaints of fever lasting for 1 week and a cough that had been increasing in severity. He was diagnosed with pneumonia and treated with 100 mg oral cefcapene three times a day. As his condition did not improve, he was referred to our hospital for treatment. A chest X-ray and CT scan revealed abscess formation in the right middle lobe of the lung, and he was diagnosed with pulmonary suppuration. Initially, he was given 2 g of ceftriaxone every 24 hours. Following detection of *Pseudomonas aeruginosa* in the sputum culture, we discontinued ceftriaxone and initiated treatment with 2 g of cefepime, an antibacterial drug, every 12 hours, depending on creatinine clearance (55 mL/min). After 4 days of treatment with cefepime, there was no change in his state of consciousness; however, myoclonic movements were observed in his face, upper limbs and trunk (video 1) for the first time. As we suspected that such symptoms were a side effect of cefepime treatment, we changed the antibacterial drug to 2 g of ceftazidime, which was administered every 8 hours. Three days after he stopped using cefepime, his myoclonic movements stopped. Such developments indicated cefepime-induced encephalopathy. Since then, there have been no further incidents of myoclonus observed. He was discharged after undergoing antibacterial drug treatment for a total of 4 weeks.

Cefepime-induced encephalopathy reportedly occurs in approximately 3% of patients who use cefepime.[1] Symptoms of cefepime-induced encephalopathy emerge approximately 1–10 days (average: 5 days) after first taking cefepime and can cause impaired consciousness, myoclonic seizures and non-convulsive status epilepticus, among other disorders.[2] Neurological symptoms naturally improve within 2–7 days after stopping the use of cefepime.[2] Patients with underlying neurological conditions are at a greater risk of cefepime-induced encephalopathy.[1] In this patient, cerebral palsy was a risk factor for cefepime-induced encephalopathy.

Physicians must be cautious when treating patients with cefepime and should be vigilant for signs of impaired consciousness and other neurological symptoms, particularly in patients with underlying neurological conditions.



Video 1 Myoclonic movements observed in the face, upper limbs and trunk of the body.

Learning points

- Use of cefepime by patients may cause symptoms of encephalopathy, such as impaired consciousness, myoclonic seizures and non-convulsive status epilepticus.
- After consuming cefepime, physicians must be vigilant for signs of encephalopathy during medical examinations, particularly in patients with underlying neurological conditions.

Contributors MM managed the case and redaction and correction of the manuscript. TK assisted with redaction, correction and reconstruction of the manuscript.

Funding This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

Open Access This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: http://creativecommons.org/licenses/by-nc/4.0/

© BMJ Publishing Group Ltd (unless otherwise stated in the text of the article) 2018. All rights reserved. No commercial use is permitted unless otherwise expressly granted.

REFERENCES

1 Grill MF, Maganti RK. Neurotoxic effects associated with antibiotic use: management considerations. *Br J Clin Pharmacol* 2011;72:381–93.
2 Dakdouki GK, Al-Awar GN. Cefepime-induced encephalopathy. *Int J Infect Dis* 2004;8:59–61.

Check for updates

To cite: Kenzaka T, Matsumoto M. *BMJ Case Rep* Published Online First: [*please include* Day Month Year]. doi:10.1136/bcr-2017-223954

BMJ Case Reports: first published as 10.1136/bcr-2017-223954 on 21 February 2018. Downloaded from http://casereports.bmj.com/ on 31 March 2019 by guest. Protected by copyright.

Copyright 2018 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit
http://group.bmj.com/group/rights-licensing/permissions.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:
- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow

BMJ Case Reports: first published as 10.1136/bcr-2017-223954 on 21 February 2018. Downloaded from http://casereports.bmj.com/ on 31 March 2019 by guest. Protected by copyright.