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Scientific letter

Sepsis outbreak associated with use of contaminated propofol in an outpatient procedure clinic

Brote de sepsis asociado con propofol contaminado en una clínica de procedimientos ambulatorios

Dear Editor:

Bloodstream infections are one of the healthcare-associated infections with the highest impact in terms of mortality and cost. Mortality is in the range of 10.1–18% in high-income nations.[1–3] In the United States, the individual cost per bloodstream infection episode has been estimated at approximately US$45,814.[4]

Although infrequent, contamination of infusates still remains an important cause of bloodstream infections, especially in low- and middle-income countries.[5] The most recent survey in Mexican hospitals revealed a 7.9% frequency of contaminated infusates, mostly due to *Enterobacter* spp.[6]

On 17/09/2019, four patients that had urological procedures earlier that same day in the Urology outpatient clinic of our hospital were hospitalized due to signs and symptoms of sepsis. An outbreak investigation ensued. Cases were defined as patients that had attended the clinic on 17/09/2019 and developed sepsis afterwards. The exposed population was defined as patients that attended the clinic that same day. Information regarding urological procedures as well as infection prevention and control procedures were obtained by review of electronic medical records and direct interaction with treating physicians. Since intravenous access was suspected to be the route of exposition, cultures were taken from propofol vials, alcohol pledgets and antiseptic solutions.

Six patients were treated in the clinic on 17/09/2019 and four fulfilled the case definition. Cases received broad spectrum antibiotic therapy. No microorganisms were recovered from blood and urine cultures. All cases made a full recovery. Two patients from the exposed population did not develop any signs or symptoms and were not admitted (Table 1).

Use of propofol was identified as the common denominator of cases (patients 1–4); none of the unaffected patients (5 and 6) had received propofol. The anesthesiologist present that day admitted to the reuse of propofol on 17/09/2019 due to a sudden shortage of this drug on that particular day. Briefly, propofol was extracted from their original vials in 10 ml-sterile syringes; then, sterile saline solution containers were emptied and refilled with 100 ml of propofol through the container hub using the syringes. The same containers were shared among the cases. Sterile needles were used for venous punction.

Pantoea agglomerans was recovered from the remains of one of the used propofol vials that was available for culture. After aseptic preparation of all propofol infusates was enforced, the outbreak was over.

This report stresses the importance of basic practices of infection prevention and control. Breaches in aseptic infusate practices have been described in outbreaks linked to propofol use as far back as 1990,[7] however, deviations continue to be reported.[8] Although a successful program for prevention of bloodstream infections has

Table 1
Clinical characteristics of cases and non-affected patients.

ID	Sex, age*	Procedure	Device	Anesthetic	Signs and symptoms	Treatment	Length of stay†	Previous urine culture isolates
1	M, 74	Cystoscopy	Cystoscope #20	Propofol	Fever, tachycardia, leukocytosis	Meropenem, vancomycin	7	*Morganella morganii, Citrobacter freundii*
2	F, 79	Cystoscopy	Cystoscope #19	Propofol	Chills, tachycardia, tachypnea, leukocytosis	Meropenem, vancomycin	9	Negative
3	M, 48	Cystoscopy	Cystoscope #19	Propofol	Fever, chills, tachycardia, hypotension, leukocytosis	Meropenem, vancomycin	8	Negative
4	F, 53	Ureteroscopy	Ureteroscope	Propofol	Hypotension, tachycardia, tachypnea, leukocytosis	Meropenem	18	Negative
5	F, 55	Double J catheter removal	Cystoscope #22	None	None	None	0	*Escherichia coli, M. morganii*
6	F, 49	Nephrostomy catheter removal	Guide wire	None	None	None	0	*Pseudomonas aeruginosa*

ID, patient identifier; M, male; F, female.
* Age (years).
† Length of hospital stay (days).

been in place in our hospital for more than a decade and has resulted in zero infections for prolonged periods of time (unpublished results), this is a remainder that surveillance must not be relaxed. Timely detection of the cause of the outbreak in our hospital led to swift actions that prevented further cases. Despite negative cultures in cases, causality is strongly suggested by the following facts: (1) the presence of a common source in cases and its absence in non-affected patients, (2) the rapid onset of symptoms after exposure to the common source by the intravenous route (endotoxin in the infusate could have been the triggering event[9]), (3) the evidence of a pathogen recovered from the common source, (4) the evidence of breaches in the aseptic preparation of propofol infusions, (5) the extinction of the outbreak after reuse of propofol was stopped, and (6) the absence of sepsis cases before manipulation of propofol vials occurred.

Propofol infusate contamination remains an important risk factor for sepsis and bloodstream infections when aseptic practices are not followed in anesthetic procedures. We make a call for continued surveillance and education to prevent further cases, especially in outpatient settings.

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Eric Ochoa-Hein[a,*], Martha A. Huertas-Jiménez[a], Alfredo Ponce-de-León[b,c], Arturo Galindo-Fraga[a]

[a] *Department of Hospital Epidemiology, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán , Mexico City, Mexico*
[b] *Department of Infectious Diseases, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán , Mexico City, Mexico*
[c] *Microbiology Laboratory, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Mexico City, Mexico*

* Corresponding author.
E-mail address: dr_eric_ochoa@yahoo.com.mx
(E. Ochoa-Hein).

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Inadvertent dual therapy with dolutegravir and lamivudine in a pregnant patient living with HIV. A case report☆

Terapia dual inadvertida con dolutegravir y lamivudina en paciente embarazada con VIH. A propósito de un caso

All pregnant women with HIV infection should receive antiretroviral therapy (ART). It should be started early, regardless of their immunological and virological status. The aim is both to prevent transmission to the foetus or newborn *(perinatal transmission)* and to improve maternal health against the HIV infection.[1]

ART decreases the rate of progression of HIV infection by reducing the viral load in peripheral blood or by maintaining virological suppression (<50 copies/ml) once achieved. This significantly reduces the risk of perinatal transmission.[2]

Ioannidis et al. established a perinatal transmission rate of 1% in women whose HIV-1 viral load (VL) remained below 1000 copies/ml. The risk was reduced almost completely if suppression of maternal viraemia was also accompanied by antiretroviral prophylaxis.[3]

In pregnant women, the preferred ART regimens differ from those recommended for non-pregnant adults, due to the lack of scientific evidence regarding efficacy and safety with some antiretrovirals in pregnancy. The recommendation is for ART based on triple therapy with combinations of *nucleoside analogue reverse transcriptase inhibitors* (NRTI) and *integrase inhibitors* (INI), such as raltegravir, or *protease inhibitors* (PI), such as ritonavir-boosted darunavir.[4–6]

We are reporting here the case of a 33-year-old woman from Morocco diagnosed with HIV-1 infection in 2011 in Greece. She was started on ART with ritonavir-boosted lopinavir (LPV/r) and a nucleoside analogue pair: emtricitabine/tenofovir (FTC/TDF). She was asymptomatic at diagnosis, with a CD4 nadir above 500 cells/μl (category A1). In 2017 the patient moved to Almería here in Spain and began follow-up at our centre.

Her adherence and tolerance to ART were good and she attended all her appointments without incident over the following three years, with optimal immunological and virological control. In March 2019, after stating that she had no desire to have children and with HBV serology negative, in order to minimise long-term toxicity, it was decided to simplify her ART to dual therapy with dolutegravir (DTG) + lamivudine (3TC). There was no virological failure before or after the switch.

In September 2019, she came to the clinic unexpectedly, 18 weeks pregnant. At that point, she was maintaining optimal immune control, with 544 CD4+/μl, and virological suppression (HIV-VL <20 copies/ml). It was decided to keep her on the same dual therapy, intensifying the obstetric checks, which had not detected any abnormalities or foetal malformations. Successive ultrasound

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