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

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

Todas las mujeres embarazadas con infección por VIH deben recibir tratamiento antirretroviral (TAR). Debe iniciarse de forma precoz, independientemente del estado inmunovirológico. El objetivo es tanto prevenir la transmisión al feto o al recién nacido *(transmisión perinatal)* como mejorar la salud materna frente a la infección por VIH[1].

El TAR disminuye la tasa de progresión de la infección del VIH reduciendo la carga viral en sangre periférica o manteniendo la supresión virológica (<50 copias/mL) una vez conseguida. Esto reduce notablemente el riesgo de transmisión perinatal[2].

Ioannidis et al. establecieron una tasa de transmisión perinatal del 1% en mujeres cuya carga viral por VIH-1 se mantenía por debajo de 1.000 copias/mL. El riesgo se reducía casi por completo si la supresión de la viremia materna, además, se acompañaba de profilaxis antirretroviral[3].

En la mujer embarazada, las pautas preferentes del TAR difieren de las recomendadas para adultos no gestantes, por la falta de evidencia científica disponible en cuanto a eficacia y seguridad con algunos antirretrovirales en el embarazo. Se recomienda un TAR basado en triple terapia con combinaciones de *inhibidores de la transcriptasa inversa análogos de nucleósidos* (ITIAN) e *inhibidores de integrasa* (INI), como raltegravir o *inhibidores de la proteasa* (IP) como darunavir potenciado con ritonavir[4-6].

Documentamos el caso de una mujer de 33 años, natural de Marruecos, diagnosticada de infección por VIH-1 en 2011 en Grecia. Se inició TAR con lopinavir potenciado con ritonavir (LPV/r) y pareja de análogos de nucleósidos: emtricitabina/tenofovir (FTC/TDF). La paciente estaba asintomática al diagnóstico, con nadir de CD4 superior a 500 cél/mcL (categoría A1). En 2017 se trasladó a Almería e inició seguimiento en nuestro centro.

Mantenía buena adherencia y tolerancia al TAR y acudía a las revisiones programadas, sin incidencias en los 3 años sucesivos, con óptimo control inmunovirológico. En marzo de 2019, tras referir que no tenía deseos genésicos y serologías frente al VHB negativas, se decidió, para minimizar la toxicidad a largo plazo, simplificar el TAR a terapia dual con dolutegravir (DTG) + lamivudina (3TC). No se produjo ningún fracaso virológico previo ni posterior al cambio.

En septiembre de 2019 acudió a consulta de forma inesperada, embarazada de 18 semanas de gestación. En ese momento mantenía un óptimo control inmunológico con 544 CD4+/mcL y supresión virológica (cv-VIH < 20 cp/mL). Se decidió mantener la misma terapia dual, intensificando los controles obstétricos, que no habían detectado ninguna anomalía ni malformaciones fetales. Las sucesivas ecografías y analíticas fueron óptimas, con buen estado inmunológico y carga viral indetectable en todas las determinaciones, incluyendo el periparto. Se produjo un embarazo a término,