

Letter to the Editor

Epidemic outbreak of gram negatives in patients with long-term tunneled hemodialysis catheters: Adverse event on hemodialysis units[☆]

Brote de bacteriemia por gramnegativos en pacientes portadores de catéteres tunelizados: evento adverso en las unidades de hemodiálisis

Dear Editor,

Implementation of a safety culture in haemodialysis (HD) units is key.¹ However, a punitive culture is responsible for limited reporting of adverse events (AEs), creating an obstacle to effective investigation. It is essential to promote a safety culture to establish strategies that ensure the provision of harm-free care. AEs are often linked to system failures, so it is more important to identify existing procedural weaknesses and report them to other units in order to adopt preventive measures, than it is to look for guilty parties.

Infectious complications of vascular access, associated with the growing use of tunnelled catheters (TCs),² represent a common AE and correspond to an epidemic outbreak of gram-negative bacteria.³ Such a complication should be a sentinel indicator to investigate its origin and route of transmission, which is not always easy.⁴ We report an epidemic outbreak of bacteraemia due to *Pseudomonas aeruginosa* (Psa) that occurred at an HD unit in Alicante, Spain, with 164 patients, in which 11 episodes of bacteraemia were detected in two months (10 gram-negative bacteria; 9 Psa). The alert was issued after the first two cases. Various points were cultured (Table 1). Massive growth of Psa was detected in the drain of a wash basin and in a Hansen coupling. This Psa was genotypically identical to the Psa detected in the patients, suggesting that it was the source of infection and presumably reached the catheter via staff. Taps can be reservoirs for Psa infection in hospitalised patients,⁵ as can other sites that are not always suspected (Table 1).

Table 1 – Points from which samples were drawn for culture, liable to be contaminated based on scientific evidence.

1. Disinfectant solutions (aqueous chlorhexidine)⁸
2. Infusion fluids (saline solution)
3. Heparins
4. Running water
5. Wash basin drain in the rooms
6. Treated water⁹
7. Acidic HD concentrates
8. Dialysis fluid at the inlet and outlet of the dialyser¹⁰
9. Hansen couplings
10. Arterial and venous blood lines
11. Monitor drainage tubes¹¹
12. Hands of staff involved in patient care¹²
13. Hand disinfectant solutions¹³

HD: haemodialysis.

All cases of bacteraemia occurred in patients with TCs (33 patients: 0.18 cases of bacteraemia/TC/months of risk). Haemodynamic instability preceded bacteraemia by a week. The first three patients received empirical vancomycin and IV tobramycin and required catheter removal. All the other patients received specific treatment from the start and responded favourably. Following disinfection of water drains and the use of a disinfectant alcohol solution before and after contact with each patient,^{6,7} no new cases appeared after 12 months.

These outbreaks highlight the importance of active surveillance of AEs in HD, strengthening safety policies, early risk assessment and the importance of case reporting.

DOI of original article:

<https://doi.org/10.1016/j.nefro.2020.04.024>.

[☆] Please cite this article as: Arenas MD. Brote de bacteriemia por gramnegativos en pacientes portadores de catéteres tunelizados: evento adverso en las unidades de hemodiálisis. Nefrología. 2021;41:210-211.

REFERENCES

- Arenas Jiménez MD, Macía-Heras M. Safety on haemodialysis: team work paradigm. *Nefrologia*. 2018;38:1–3.
- Lok CE, Foley R. Vascular access morbidity and mortality: trends of the last decade. *Clin J Am Soc Nephrol*. 2013;8:1213–9.
- Borrego García E, Ruiz Sancho AL, Plaza Lara E, Díaz Gómez L, Delgado Ureña A. Bacteremia outbreak due to *Pantoea agglomerans* in hemodialysis, an infection by an unexpected guest. *Nefrologia*. 2020;S0211–6995:30199–207.
- Arenas Jiménez MD, Ferre G, Álvarez-U de F. Strategies to increase patient safety in hemodialysis: application of the modal analysis system of errors and effects (FEMA system). *Nefrologia*. 2017;37:608–21.
- Blanc DS, Nahimana I, Petignat C, Wenger A, Bille J, Francioli P. Faucets as a reservoir of endemic *Pseudomonas aeruginosa* colonization/infections in intensive care units. *Intensive Care Med*. 2004;30:1964–8.
- Centers for Disease Control and Prevention. Guideline for hand hygiene in health-care setting. *MMWR*. 2002;51(RR16):1–44.
- Sánchez-Payá J, Galicia-García MD, Gracia-Rodríguez RM, García-González C, Fuster-Pérez M, López-Fresneña N, et al. Compliance with hand hygiene guidelines and determinants of compliance [Article in Spanish]. *Enferm Infecc Microbiol Clin*. 2007;25:369–75.
- Tena D, Carranza R, Barbera JR, Valdezate S, Garrancho JM, Arranz M, Saez-Nieto JA. Outbreak of long-term intravascular catheter-related bacteremia due to *Achromobacter xylosoxidans* subspecies *xylosoxidans* in a hemodialysis unit. *Eur J Clin Microbiol Infect Dis*. 2005;24:727–32.
- Rodríguez Jornet A, García García M, Mariscal D, Fontanals D, Cortés P, Coll P, et al. An outbreak of gram-negative bacteremia (GNB), especially enterobacter cloacae, in patients with long-term tunnelled haemodialysis catheters [Article in Spanish]. *Nefrologia*. 2003;23:333–43.
- Jochimsen EM, Frenette C, Delorme M, Arduino M, Agüero S, Carson L, et al. A cluster of bloodstream infections and pyrogenic reactions among hemodialysis patients traced to dialysis machine waste-handling option units. *Am J Nephrol*. 1998;18:485–9.
- Wang SA, Levine RB, Carson LA, Arduino MJ, Killar T, Grillo FG, et al. An outbreak of gram-negative bacteremia in hemodialysis patients traced to hemodialysis machine waste drain ports. *Infect Control Hosp Epidemiol*. 1999;20:746–51.
- Lee SC, Chen KS, Tsai CJ, Lee CC, Chang HY, See LC, et al. An outbreak of methicillin-resistant *Staphylococcus aureus* infections related to central venous catheters for hemodialysis. *Infect Control Hosp Epidemiol*. 2004;25:678–84.
- Becks VE, Lorenzoni NM. *Pseudomonas aeruginosa* outbreak in a neonatal intensive care unit: a possible link to contaminated hand lotion. *Am J Infect Control*. 1995;23:396–8.

María Dolores Arenas

Fundación Renal Iñigo Alvarez de Toledo, Spain

E-mail addresses: lola@olemiswebs.com, Mdarenas@friat.es

2013-2514/© 2020 Sociedad Española de Nefrología. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).
<https://doi.org/10.1016/j.nefro.2020.04.009>

Acute renal failure due to henna stone ingestion as a remedy of diabetes

Fallo renal agudo debido a la ingestión de cálculos de henna en el tratamiento de la diabetes

Dear Editor,

In developing countries; traditional, herbal or alternative medicine has huge impacts on patients with chronic diseases. The easy and promised illusion of these products catches attention and drives patients using them. Henna is used traditionally for hair dying and temporary tattooing in Turkey, and many other countries; henna stone also known as German stone is a kind of solid material in which crushed powder form can be used as henna and contains a high amount of *p*-phenylenediamine (PPD)¹ Toxicity of this compound has two

phases in human; first allergic reaction with angioedema and the second systemic phenomena occurs with intravascular hemolysis, rhabdomyolysis, and acute kidney injury. Herein, we presented a case of an elderly woman who ingests henna stone in the hope of treating diabetes and had acute kidney failure requiring hemodialysis treatment without the initial allergic phase.

A 73-year-old woman was brought to the emergency room of Hakkari State Hospital with a one-day history of feeling bad, skeletal muscle pain, dizziness, and disorientation. Two days prior to admission, an herbalist advised her to drink crushed henna stone powder in water for her uncontrolled diabetes and to quit insulins. After she did this, symptoms appeared gradually.

Her examination revealed that she was afebrile, oriented and able to communicate. Her blood pressure was 150/80 mmHg with a heart rate of 104 bpm. There were no

DOI of original article:

<https://doi.org/10.1016/j.nefro.2020.04.024>.