

4. Alves Monteiro MA, Moura Barbosa RG, Teixeira Barroso MG, Cunha Vieira NF, Bezerra Pinheiro AK. Dilemas éticos vivenciados por enfermeros y presentados en publicaciones de enfermería. *Rev Latino-Am Enfermagem*. 2008;16(6):1054–9.
5. Montero Salinas A, Martínez-Isasi S, Fieira Costa E, Fernández García A, Josefa Castro Dios D, Fernández García D. Conocimientos y actitudes ante la donación de órganos de los profesionales sanitarios de un hospital de tercer nivel. *Rev Esp Salud Pública*. 2018;92, 1-28deabrile-L.
6. Cuidados intensivos orientados a la donación de órganos recomendaciones Grupo de trabajo SEMICYUC-ONT [Accessed el 23/01/2019]. Available from: http://www.ont.es/mailings/CIOD_Recomendaciones%20SEMICYUCONT_Septiembre2017.pdf.
7. Ley 2/2010, de 8 de abril, de Derechos y Garantías de la Dignidad de la Persona en el Proceso de la Muerte.

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Chlorhexidine for reducing catheter-associated urinary tract infection: An effective yet understudied solution[☆]



Clorhexidina para reducir las infecciones del tracto urinario asociadas al catéter: una solución efectiva, aunque poco estudiada

Dear Editor,

The proportion is high of patients hospitalized in the intensive care unit (ICU) who inevitably need a urinary catheter, and catheter-associated urinary tract infection (CAUTI) is one of the most common infections in these patients.¹ Previous research has established that these infections are often associated with increased resistance of microorganisms to antimicrobial drugs and prolonged stays in ICU, as well as increased morbidity and mortality in ICU patients.

Various preventive and therapeutic measures, such as appropriate use of the urinary catheter and its early removal, have been taken to reduce CAUTIs. However, these infections in ICU patients remain problematic. In this regard, measures such as the use of antiseptics, which reduce bacterial colonisation, have been shown to be effective in reducing CAUTIs. However, the guidelines do not recommend the use of antiseptic agents,² because current evidence is inconclusive on the effectiveness of the available antiseptics for cleansing the meatus prior to catheter insertion.^{3,4}

Because urinary tract infections are preventable, more interventions with a greater positive impact on CAUTI rates are needed to reduce these infections in ICU patients. Among the preventive measures, chlorhexidine cleansing of

the meatus has shown promising but contradictory results in reducing CAUTIs.^{4–6} For example, Mitchell et al.⁶ evaluated the effectiveness and cost-effectiveness of chlorhexidine for meatal cleansing prior to urinary catheter insertion at three hospitals in Australia. The authors found that, compared to normal saline, the use of chlorhexidine (.1%) could reduce the incidence of bacteriuria and CAUTIs. In addition, it was associated with shorter hospital stays and treatment costs. Similarly, Huang et al.,⁷ in a secondary analysis, explored the effect of body surface decolonisation on bacteriuria and candiduria in ICU patients. The protocol included chlorhexidine cleansing of the perineum and the area near the urinary catheters. They found that universal decolonization with chlorhexidine baths could decrease candiduria and any bacteriuria in male patients.

In contrast, Düzakaya et al.⁸ compared the efficacy of periurethral cleansing with .05% chlorhexidine and 10% povidone-iodine or sterile water to prevent CAUTIs prior to indwelling urinary catheter insertion in a paediatric ICU of 122 patients. The authors found that, although the differences between the groups were not significant, CAUTIs occurred less frequently in patients assigned to the chlorhexidine cleansing group. Cao et al.⁴ conducted a network meta-analysis to compare the effect of seven different methods of urethral cleansing, including chlorhexidine, in preventing CAUTIs. They found no significant differences between the different methods of urethral cleansing; however, the effect of chlorhexidine was better than that of the other methods. The authors recommended the use of chlorhexidine to cleanse the urethra only in critical patients.

In view of the above, the results of studies examining the efficacy of chlorhexidine are inconsistent. Notably, there are limited studies that examine the efficacy of chlorhexidine in ICUs to reduce CAUTIs. There are several reasons to suggest that the use of topical chlorhexidine merits further clinical research to assess its effectiveness in reducing ICU-acquired CAUTIs. Chlorhexidine is a biguanide with broad-spectrum antiseptic activity, with no significant reported adverse effects, that is used to reduce bacterial infections and multi-drug resistant organisms. It can provide bacteriostatic and bactericidal action over 24 h, after an application of 2 min., and is also active on fungi and some viruses. It is available worldwide, and no prescription is required. It is

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simple and economical to use. Therefore, further research is recommended to confirm or refute the efficacy of chlorhexidine in ICUs in the prevention of CAUTIs.

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Conflict of interests

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References

1. Duszynska W, Rosenthal VD, Szczesny A, et al. Urinary tract infections in intensive care unit patients - a single-centre, 3-year observational study according to the INICC project. *Anaesthesiol Intensive Ther.* 2016;48:1–6, 2016/03/12. DOI: 10.5603/ait.2016.0001.
2. Hooton TM, Bradley SF, Cardenas DD, et al. Diagnosis, prevention, and treatment of catheter-associated urinary tract infection in adults: 2009 International Clinical Practice Guidelines from the Infectious Diseases Society of America. *Clin Infect Dis.* 2010;50:625–63, 2010/02/23. DOI: 10.1086/650482.
3. Fasugba O, Koerner J, Mitchell BG, et al. Systematic review and meta-analysis of the effectiveness of antiseptic agents for meatal cleaning in the prevention of catheter-associated urinary tract infections. *J Hosp Infect.* 2017;95:233–42, 2016/12/18. DOI: 10.1016/j.jhin.2016.10.025.
4. Cao Y, Gong Z, Shan J, et al. Comparison of the preventive effect of urethral cleaning versus disinfection for catheter-associated urinary tract infections in adults: A network meta-analysis. *Int J Infect Dis.* 2018;76:102–8, 2018/09/24. DOI: 10.1016/j.ijid.2018.09.008.
5. Galiczewski JM. Interventions for the prevention of catheter associated urinary tract infections in intensive care units: An integrative review. *Intensive Crit Care Nurs.* 2016;32:1–11, <http://dx.doi.org/10.1016/j.iccn.2015.08.007>.
6. Mitchell BG, Fasugba O, Cheng AC, et al. Chlorhexidine versus saline in reducing the risk of catheter associated urinary tract infection: A cost-effectiveness analysis. *Int J Nurs Stud.* 2019;97:1–6, <http://dx.doi.org/10.1016/j.ijnurstu.2019.04.003>.
7. Huang SS, Septimus E, Hayden MK, et al. Effect of body surface decolonisation on bacteriuria and candiduria in intensive care units: an analysis of a cluster-randomised trial. *Lancet Infect Dis.* 2016;16:70–9, 2015/12/04. DOI: 10.1016/s1473-3099(15)00238-8.
8. Duzkaya DS, Uysal G, Bozkurt G, et al. Povidone-Iodine, 0.05% Chlorhexidine Gluconate, or Water for Periurethral Cleaning Before Indwelling Urinary Catheterization in a Pediatric Intensive Care: A Randomized Controlled Trial. *J Wound Ostomy Continence Nurs.* 2017;44:84–8, 2016/11/09. DOI: 10.1097/won.0000000000000280.

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