



XIV Congresso Brasileiro de
Controle de Infecção e
Epidemiologia Hospitalar
19 A 22 DE NOVEMBRO DE 2014 | EXPO UNIVED CURITIBA | CURITIBA | PR



Clorexidine para prevenção de IRAS LADO A - VANTAGENS

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CLOREXIDINE

- Classificação = antisséptico
- Química = biguanida
- Espectro de ação = bactérias Gram + e Gram –
- Indicações = antissepsia de pele e de mucosas

DEGERMANTE

2 %

4 %

ALCOÓLICO

0,5 %

AQUOSA

0,2 %

0,12 %

Clorexidine - Banho

RACIONAL

Redução da microbiota
da pele

OBJETIVOS

Prevenção de ISC
Prevenção de IRAS em
UTI

ICS
**Redução de aquisição de
patógenos MR**

Clorexidine – Banho ISC

ISC comumente são causadas pela microflora da própria pele do paciente

EVIDÊNCIAS

- Banho com clorexidine reduz a contaminação da pele
 - Davies J, Babb JR. A comparison of bathing with antiseptic solution and soap. *J Hosp Infect* 1973;4:73–81
- Banhos reduzem a contaminação progressiva ao longo da cirurgia
 - Fisher J. The effect of a 4% chlorhexidine gluconate as a full-body skin disinfectant. *J Hosp Infect* 1993; 21:205–9.
- O banho pré-operatório com clorexidine é superior ao banho pré-operatório com PVPI
 - Garibaldi RA. Prevention of intraoperative wound contamination with chlorhexidine shower and scrub. *J Hosp Infect* 1988; 11(Suppl B):5–9.

E A REDUÇÃO DE ISC ????

Clorexidine – Banho ISC

Jakobsson J, Perlkvist A, Wann-Hansson C (2011)

Searching for evidence regarding using preoperative disinfection showers to prevent surgical site infections: a systematic review.

Worldviews on Evidence-Based Nursing 8: 143–52

- 10 estudos
- N = 7.351
- 1 BANHO (2 estudos)
- 2 BANHOS (5 estudos)
- 3 BANHOS (3 estudos)
- Nenhuma conclusão N de banhos
- 8 estudos => Clorexidine = redução da microbiota da pele
- Bactérias na pele => não necessariamente correlacionada ISC

Clorexidine – Banho ISC

Webster J, Osborne S.

Preoperative bathing or showering with skin antiseptics to prevent surgical site infection.

Cochrane Database of Systematic Reviews 2012, Issue 9. Art. No: CD004985

- 7 RCTs
- N = 10.157

For the primary outcome of surgical site infection (as defined by individual trial authors), preoperative showering or bathing with chlorhexidine was found to be no more effective than:

- placebo (relative risk [RR]=0.91, 95% CI 0.80 to 1.04, p=0.17; 4 RCTs, n=7791)
 - soap (RR=1.02, 95% CI 0.57 to 1.84; 3 RCTs, n=1443)
 - or no washing (RR=0.82, 95% CI 0.26 to 2.62; 3 RCTs, n=1142).
-
- Limitação da evidencia = 1 RCT realizado há 20 anos = mudanças nas praticas cirúrgicas

Clorexidine – Banho ISC

Kamel C, McGahan L, Polisena J et al. (2012) Preoperative skin antiseptic preparations for preventing surgical site infections: a systematic review. Infection Control & Hospital Epidemiology 33: 608–17

- 20 estudos
- N = 9.520
- Banho pré-operatório => redução da microbiota da pele
- Efeito na taxa ISC => INCONCLUSIVA
- Sem conclusão => melhor antisséptico
- Limitações = formulação e aplicação dos antissépticos foram inconsistentes entre os estudos/vários procedimentos cirúrgicos

Clorexidine – Banho ISC

Conclusão

Benefícios

Redução na

Evidência de

invasiva

VANTAGEM DO BANHO COM
CLOREXIDINE

SITUACOES ESPECIAIS:
NEURO, ORTOP, CARD, Tx

- A Clorexidina reduz a microbiota da pele
- Não deixa resíduos
- Ativa contra o sangue e matéria orgânica
- Boa aceitação

Clorexidine – Banho UTI

- MEDIDAS DE CONTROLE EM UTI => HIGIENIZACAO DAS MAOS E DO AMBIENTE
- GRANDE INVESTIMENTO NA DESCOLONIZACAO E DESCONTAMINACAO DE PACIENTES COLONIZADOS

MRSA

- Banho com clorexidine reduz colonização da pele
- Erradicação da colonização somente combinada com mupirocina
- Clorexidina utilizada para controle de surtos

Sandri AM, Zavascki AP. Reduction in incidence of nosocomial methicillin-resistant *Staphylococcus aureus* (MRSA) infection in an intensive care unit: role of treatment with mupirocin ointment and chlorhexidine baths for nasal carriers of MRSA. *Infect Control Hosp Epidemiol* 2006; 27:185–7.

VRE

- Banho com clorexidine reduz colonização da pele e do ambiente
- Redução da aquisição de VRE (RR 0.4; 95% CI, 0.1–0.9)
- Redução da contaminação das mãos PDS por VRE

Vernon MO et al. Chlorhexidine gluconate to cleanse patients in a medical intensive care unit: the effectiveness of source control to reduce the bioburden of vancomycin-resistant enterococci. *Arch Intern Med* 2006; 166: 306–12.

Clorexidine – Banho UTI

- Redução de 32% = aquisição de MRSA ($p < 0,05$)
- Redução de 30% = aquisição de VRE ($p < 0,01$)
- Redução de 21% = incidência de ICS ($p < 0,05$)
- Redução de 23% = aquisição de MRSA/VRE ($p = 0,03$)
- Redução de 28% = incidência de ICS ($p = 0,007$)

Michael W. Climo. **The effect of daily bathing with chlorhexidine on the acquisition of methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant *Enterococci*, and healthcare-associated bloodstream infections:**

Results of a quasi-experimental multicenter trial*

Crit Care Med 2009 Vol. 37, No. 6

Michael W. Climo. **Effect of Daily Chlorhexidine Bathing on Hospital-Acquired Infection.**

N Engl J Med 368;6 nejm.org february 7, 2013

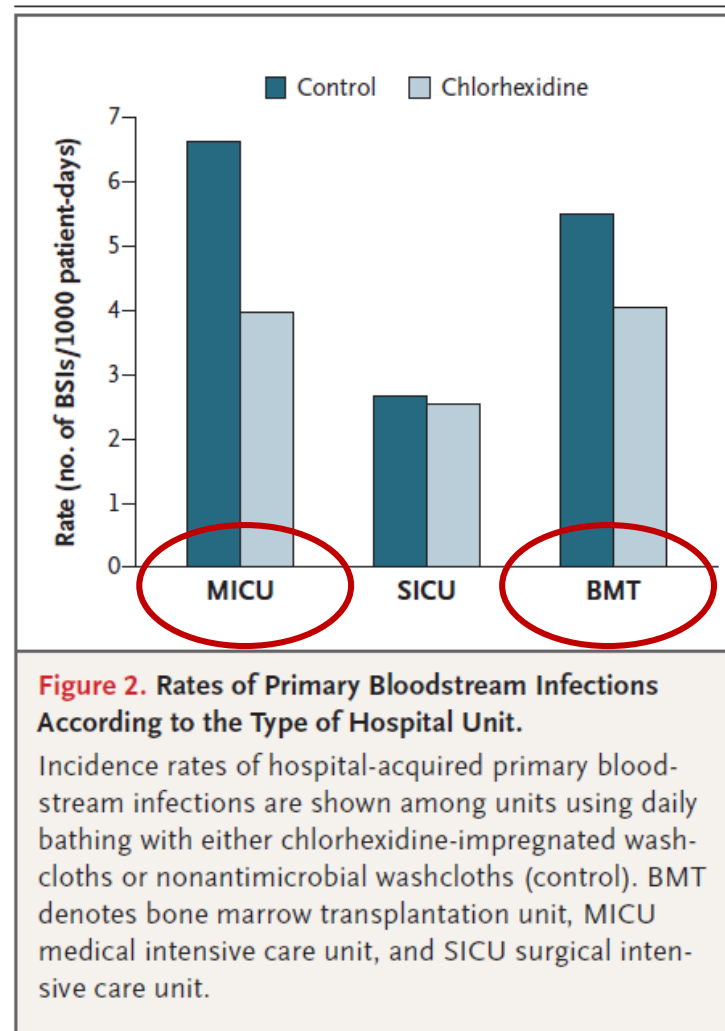
Clorexidine – Banho UTI

Table 3. Etiologic Agents of Identified Primary Bloodstream Infections.*

Agent	Intervention Period		Control Period		P Value
	No. of Infections	Incidence Rate	No. of Infections	Incidence Rate	
Staphylococci	24	0.96	42	1.68	0.03
<i>Staphylococcus aureus</i>	9	0.36	8	0.32	0.80
Coagulase-negative staphylococci	15	0.60	34	1.36	0.008
Enterococci	19	0.76	26	1.04	0.30
<i>Enterococcus faecalis</i>	13	0.52	19	0.76	0.29
<i>E. faecium</i>	6	0.24	6	0.24	1.00
Gram-negative bacilli	23	0.92	27	1.08	0.58
Acinetobacter	1	0.04	2	0.08	1.00
Escherichia	8	0.32	6	0.24	0.52
Enterobacter	2	0.08	8	0.32	0.06
Klebsiella	5	0.20	5	0.20	1.00
Pseudomonas	4	0.16	2	0.08	0.41
Serratia	2	0.08	1	0.04	1.00
Stenotrophomonas	0	0.00	1	0.04	1.00
Other	1	0.04	2	0.08	1.00
Fungi	9	0.36	19	0.76	0.06
Candida	7	0.28	16	0.64	0.06
Other	2	0.08	3	0.12	0.66
Polymicrobial organisms	9	0.36	12	0.48	0.52
Other	6	0.24	5	0.20	0.76
Total	90	3.61	131	5.24	0.01

* The incidence rate was defined as the number of primary bloodstream infections per 1000 patient-days.

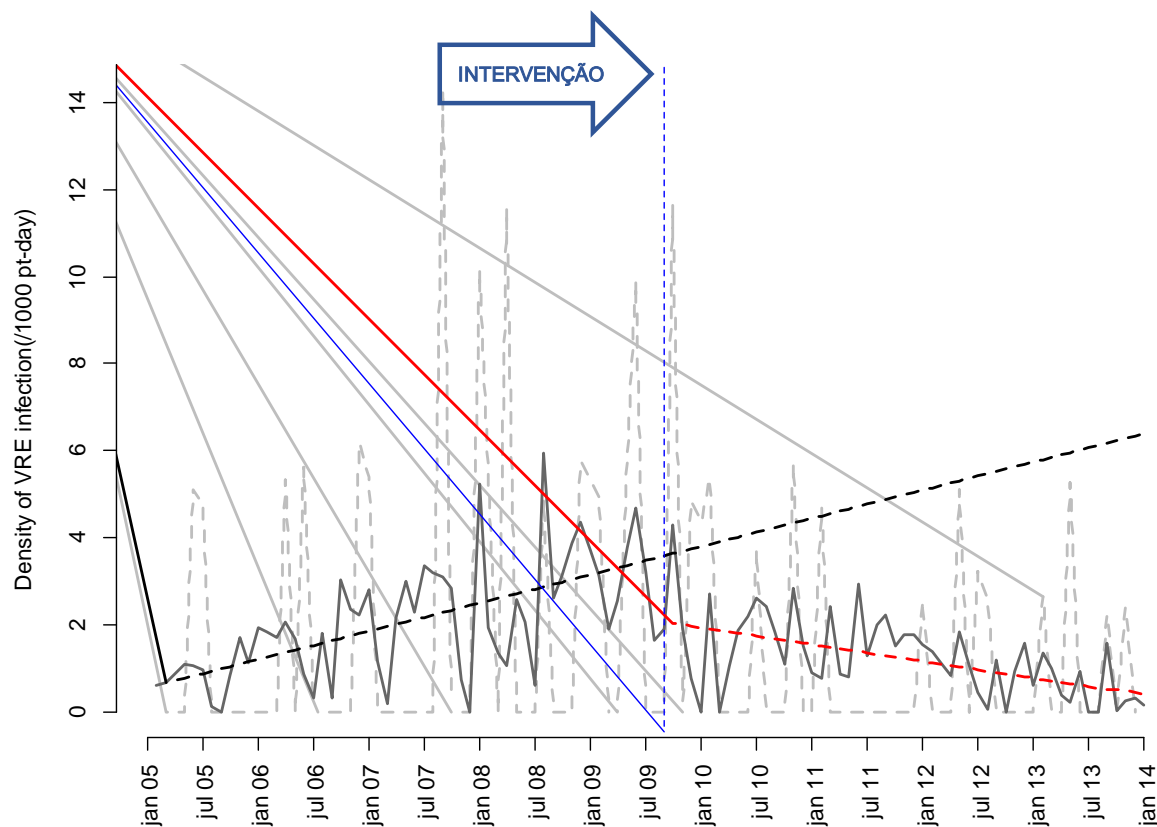
Clorexidine – Banho UTI



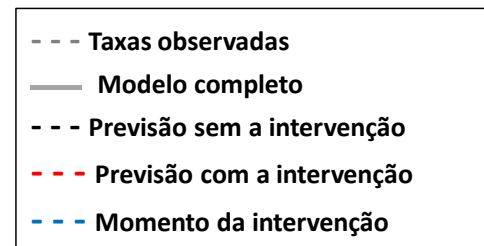
Distribuição temporal das densidades de incidência de infecção por VRE nos momentos pré e pós intervenção na enfermaria de TCTH do HC-FMUSP de 2005 à 2013

Elisa T Mendes, Silvia F Costa

VRE-INF



Model (0,0,4) (0,0,1)			
Variable	Betta	SE	P value
Constant	0.557	0.564	0.326
Secular	0.054	0.018	0.003
Intervention	-1.429	0.813	0.082
Post-intervention	-0.086	0.025	0.001



Clorexidine – Banho UTI

Infect Control Hosp Epidemiol. 2014 Oct;35 Suppl 3:S17-22. doi: 10.1086/677822.

Does chlorhexidine bathing in adult intensive care units reduce blood culture contamination? A pragmatic cluster-randomized trial.

Septimus EJ¹, Hayden MK, Kleinman K, Avery TR, Moody J, Weinstein RA, Hickok J, Lankiewicz J, Gombosev A, Haffenreffer K, Kaganov RE, Jernigan JA, Perlin JB, Platt R, Huang SS.

Author information

Abstract

OBJECTIVE: To determine rates of blood culture contamination comparing 3 strategies to prevent intensive care unit (ICU) infections: screening and isolation, targeted decolonization, and universal decolonization.

DESIGN: Pragmatic cluster-randomized trial.

SETTING: Forty-three hospitals with 74 ICUs; 42 of 43 were community hospitals.

PATIENTS: Patients admitted to adult ICUs from July 1, 2009, to September 30, 2011.

METHODS: After a 6-month baseline period, hospitals were randomly assigned to 1 of 3 strategies, with all participating adult ICUs in a given hospital assigned to the same strategy. Arm 1 implemented methicillin-resistant *Staphylococcus aureus* (MRSA) nares screening and isolation, arm 2 targeted decolonization (screening, isolation, and decolonization of MRSA carriers), and arm 3 conducted no screening but universal decolonization of all patients with mupirocin and chlorhexidine (CHG) bathing. Blood culture contamination rates in the intervention period were compared to the baseline period across all 3 arms.

RESULTS: During the 6-month baseline period, 7,926 blood cultures were collected from 3,399 unique patients: 1,099 sets in arm 1, 928 in arm 2, and 1,372 in arm 3. During the 18-month intervention period, 22,761 blood cultures were collected from 9,878 unique patients: 3,055 sets in arm 1, 3,213 in arm 2, and 3,610 in arm 3. Among all individual draws, for arms 1, 2, and 3, the contamination rates were 4.1%, 3.9%, and 3.8% for the baseline period and 3.3%, 3.2%, and 2.4% for the intervention period, respectively. When we evaluated sets of blood cultures rather than individual draws, the contamination rate in arm 1 (screening and isolation) was 9.8% (N = 108 sets) in the baseline period and 7.5% (N = 228) in the intervention period. For arm 2 (targeted decolonization), the baseline rate was 8.4% (N = 78) compared to 7.5% (N = 241) in the intervention period. Arm 3 (universal decolonization) had the greatest decrease in contamination rate, with a decrease from 8.7% (N = 119) contaminated blood cultures during the baseline period to 5.1% (N = 184) during the intervention period. Logistic regression models demonstrated a significant difference across the arms when comparing the reduction in contamination between baseline and intervention periods in both unadjusted (P = .02) and adjusted (P = .02) analyses. Arm 3 resulted in the greatest reduction in blood culture contamination rates, with an unadjusted odds ratio (OR) of 0.56 (95% confidence interval [CI], 0.044-0.71) and an adjusted OR of 0.55 (95% CI, 0.43-0.71).

CONCLUSION: In this large cluster-randomized trial, we demonstrated that universal decolonization with CHG bathing resulted in a significant reduction in blood culture contamination.

Clorexidine – Banho UTI

Am J Infect Control. 2014 May;42(5):571-3. doi: 10.1016/j.ajic.2013.12.026.

Modifying the risk: once-a-day bathing "at risk" patients in the intensive care unit with chlorhexidine gluconate.

Armellino D¹, Woltmann J², Parmentier D², Musa N³, Eichorn A⁴, Silverman R⁵, Hirschwerk D⁵, Farber B⁵.

+ Author information

Abstract

Chlorhexidine gluconate (CHG) decreases hospital-acquired methicillin-resistant *Staphylococcus aureus* (MRSA) that can cause colonization and infection. A standard approach is the bathing of all patients with CHG to prevent MRSA transmission. To decrease CHG utilization, this study assessed selective daily administration of CHG bathing to intensive care unit patients who had an MRSA-positive result or a central venous catheter. This risk-based approach was associated with a 72% decrease in hospital-acquired MRSA transmission rate.

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KEYWORDS: Chlorhexidine; Intensive care unit; Methicillin-resistant *Staphylococcus aureus*; Prevention; Transmission

Clorexidine – Banho UTI

CONCLUSÃO

- Redução na aquisição de MRSA

MR

VANTAGEM DO BANHO COM
CLOREXIDINE EM UTI
PROBLEMA FOR MRSA E VRE
(COLONIZACAO)
ICS (ECN/CONTAMINANTE)
MEDIDA ADJUVANTE

de ICS em UTI
com positivos (ECN)

Clorexidine – Higiene Oral

RACIONAL

Descolonizar a orofaringe de organismos potencialmente patogênicos para reduzir a patogenicidade do conteúdo do aspirado.

OBJETIVOS

Prevenção de PAV

Clorexidine – Higiene Oral

- Meta-análise de 7 ensaios
- Descontaminação oral com antissépticos foi associada com uma redução da incidência de PAV
- Não se observaram efeitos sobre a duração de ventilação mecânica ou mortalidade

Chan EY, Ruest A, Meade MO, et al. Oral decontamination for prevention of pneumonia in mechanically ventilated adults: systematic review and meta-analysis. BMJ 2007; 334 (7599): 889.

Clorexidine – Higiene Oral

- Metanálise de 7 estudos
- Descontaminação oral com antissépticos foi associada com uma redução da incidência de PAV (30%)
- Maior benefício em pacientes submetidos a cirurgia cardíaca (duração da VM menor)
- Não se observaram efeitos sobre a mortalidade

Chlebicki M P, Safdar N. Topical chlorhexidine for prevention of ventilator-associated pneumonia: a meta-analysis. *Critical Care Medicine* 2007; 35(2): 595-602.

Clorexidine – Higiene Oral

Conclusões

- Apesar das contraindicações, alguns estudos mostram

-

VANTAGEM DA HIG ORAL COM
CLOREXIDINE
REDUZ A PLACA DENTAL
MEDIDA SIMPLES E BARATA
DEVE FAZER PARTE DO PACOTE

analises

Clorexidine – Antissepsia da pele

RACIONAL

Redução da microbiota transitória da pele

Descolonização da pele antes da inserção de dispositivos invasivos (CVC) ou cirurgias

OBJETIVOS

Antissepsia das mãos

Prevenção de ICS-CVC

Prevenção de ISC

Clorexidine – Antissepsia da pele

- Clorexidine = agente de escolha para preparação da pele antes da inserção de CVC
- 1991 = Maki (clorex > alcool > PVPI)
- 2002 = Metanálise 8 estudos (49% redução ICS-CVC)
- 2002 = Guia CDC => Recomendação de clorex

Milstone AM. Chlorhexidine: Expanding the Armamentarium for Infection Control and Prevention
Clinical Infectious Diseases 2008; 46:274–81

Clorexidine – Antissepsia da pele

Vantagens

- **Uso em formulações de sabão e em escovação é baseado em mais de 25 anos de experiência**
- **Redução da microbiota da pele de 86 a 92%**
- **Atividade residual na pele (até 6 horas)**

Milstone AM. Chlorhexidine: Expanding the Armamentarium for Infection Control and Prevention
Clinical Infectious Diseases 2008; 46:274–81

Table 1. Evidence supporting selected uses of chlorhexidine for infection control.

Application	Evidence in support of efficacy for specified chlorhexidine application ^a	Selected references
Antisepsis, skin		
Surgical hand scrub ^b	An 86%–92% reduction in hand skin flora (A)	[2, 3]
General skin cleansing ^b	Significant reduction in normal skin flora, gram-negative organisms, and <i>Staphylococcus aureus</i> (A)	[4, 5]
Daily bathing of ICU patients	Reduction of VRE acquisition rates in ICU patients (RR, 0.4) (B)	
	Reduction of environmental VRE contamination (B)	
	Reduction in acquisition of MRSA (32%) and VRE (30%) (B)	
	Decreased frequency of BSI (B)	
Preoperative bathing	Significant reduction in skin microbial burden (A)	[14, 15]
	No clear evidence for reduction in SSI (C)	[16, 17]
Preoperative bathing	Significant reduction in skin microbial burden (A)	
	No clear evidence for reduction in SSI (C)	
Preoperative scrub ^b	Superior to other antiseptics in reducing skin flora at surgical site (A)	
	No clear evidence of reduction in SSI rate (C)	
Central venous catheter site preparation ^b	50% Reduction in catheter colonization for chlorhexidine versus povidone-iodine (A)	
	49% Reduction in catheter-related BSI comparing skin prep with chlorhexidine versus povidone-iodine (A)	
Surgical site infection prevention	No evidence of an overall reduction in SSI rates (CI: 36% reduction in deep	[34]

Antisepsis, oropharynx

Prevention of VAP

Reduction using random effects modeling (RR, 0.58–0.7) (B); clear benefit in cardiothoracic surgery patients. Overall benefit may relate to duration of mechanical ventilation. (B)

surgical site infection; VAP, ventilator-associated pneumonia; VRE, vancomycin-resistant enterococci.

^a A, strong evidence to support chlorhexidine efficacy; B, early evidence to support chlorhexidine efficacy; C, no consistent or clear evidence to support efficacy of chlorhexidine.

^b US Food and Drug Administration–approved indication. Safety data for most chlorhexidine-containing products have not been established for children aged <18 years, so most chlorhexidine-containing products have not been approved by the US Food and Drug Administration for children aged <18 years.

^c Data are from abstracts from national meetings of medical societies.

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SBI - Sociedade Brasileira de Infectologia - 1980

SRGI - Sociedade Rio-Grandense de Infectologia

CCM Worldwide Medical Congresses

The poster features a central graphic of a stylized white figure with a circular head, surrounded by a ring of colorful dots. To the right, there are three small images: a night view of a building with a clock tower, an interior view of a room with a fireplace and chandelier, and a sunset view of a building silhouette.