# Avaliação do Conhecimento do Protocolo de Higiene Bucal pela Equipe de Enfermagem da Unidade de Terapia Intensiva de Dois Hospitais em Londrina/PR

# Evaluation of Knowledge of the Oral Hygiene Protocol by the Nursing Team of the Intensive Care Unit of Two Hospitals In Londrina/PR

Jéssica de Mello Scalco[a]*; Marina Rechi[b]; Marcelo Lupion Poleti[c]; Thais Maria Freire Fernandes[d]

[a]Hospital do Coração de Londrina. PR, Brasil.
[b]Unopar, Dentistry course. PR, Brasil.
[c]Instituto Federal do Paraná. PR, Brasil.
[d]Unopar, Graduate Program Stricto Sensu in Dentistry. PR, Brasil.
*E-mail: jessica.scalco@hotmail.com

## Abstract

Oral hygiene in the Intensive Care Unit - ICU is considered a basic and indispensable procedure whose goal is to maintain the patients' healthy oral conditions, reducing complications and contributing to their recovery. The objective of this study was to evaluate the knowledge on the oral hygiene protocol by the ICU nursing team of two hospitals in Londrina/PR. The sample of this study was composed by the nursing and nursing technicians team of the Intensive Care Unit of the Hospital A and Hospital B, regardless of gender or age, and considering who had worked at the ICU for at least three months. A self-administered, unidentified questionnaire was used to collect data. The analyzed variables were: profession, age, sex, working time and oral hygiene. More than 80% of the professionals were Nursing Technicians, with average age above 30, female and working in the ICU of the hospital for over 3.5 years. The results of this study demonstrate the lack of knowledge of the oral hygiene protocol by more than 30% of the Nursing staff in both hospitals. Based on the methodology and the results analysis, it can be concluded that the oral hygiene protocol is unknown by more than a third of the ICU Nursing team of both surveyed hospitals.

**Keywords**: Intensive Care Units. Disease Prevention. Oral Hygiene.

## Resumo

*A higiene bucal em Unidade de Terapia Intensiva - UTI é considerada um procedimento básico e indispensável cujo objetivo é manter saudáveis as condições bucais dos pacientes, reduzindo agravos e contribuindo para sua recuperação. O objetivo deste estudo foi avaliar o conhecimento do protocolo de higiene bucal pela equipe de enfermagem da UTI de dois hospitais em Londrina/PR. A amostra deste estudo foi composta pela equipe de Enfermagem (Enfermeiros e Técnicos em Enfermagem) da Unidade de Terapia Intensiva do Hospital A e do Hospital B, independente do sexo e idade, e que trabalhavam na UTI, no mínimo, há três meses. Para a coleta de dados foi utilizado um questionário autoaplicável, não identificado. As variáveis analisadas foram: profissão, idade, sexo, tempo de trabalho e higiene bucal. Mais de 80% dos profissionais eram Técnicos em Enfermagem, com idade média acima dos 30 anos de idade, do sexo feminino e atuando na UTI do hospital, em média, acima de 3,5 anos. Os resultados deste estudo demonstram a falta de conhecimento do protocolo de higiene bucal, por mais de 30% da equipe de Enfermagem, em ambos os hospitais. Com base na metodologia e análise dos resultados, pode-se concluir que o protocolo de higiene bucal é desconhecido por mais de um terço da equipe de Enfermagem da UTI de ambos os hospitais pesquisados.*

**Palavras-chave:** *Unidades de Terapia Intensiva. Prevenção de doenças. Higiene Bucal.*

## 1 Introduction

The ventilator-associated pneumonia - VAP is the most common nosocomial infection in Intensive Care Unit -ICU and is associated with increased mortality rate and the hospitalization cost [1-5]. The signs and symptoms may arise already after the second day of tracheal intubation[5].

Some authors reported that 24 hours after admission to ICU patients may be colonized with respiratory pathogens, such as *Pseudomonas, Acinetobacter, Staphylococcus aureus* and *Candida*[2,6,7], and infection occur, especially after the aspiration of oropharyngeal secretion containing these pathogens[4,8,9].

The ICU patients are more susceptible to colonization in the oropharynx, because they are exposed to pathogens endemic environment itself, in addition to other contributing factors, such as the reduction of salivary secretion and content of immunoglobulin A, the accumulation of secretions as a result of the intubation, the unique atmosphere created by the endotracheal tube and, especially, the precariousness of oral hygiene[3,4,6,10].

Thus, considering that the oral cares have an important role in the biofilm control[4,9,10] and in the incidence of VAP reduction[3], the aim of this work was to evaluate the knowledge of oral hygiene protocol by the ICU nursing team of two hospitals in Londrina/PR.

## 2 Material and Methods

This study was approved by the Committee for Ethics in Research - CEP Unopar (Opinion no. 537,728). The sample

of this study was composed by the nursing team (Nurses and Nursing technicians)of the Intensive Care Unit of two hospitals in Londrina-PR (Hospital A and Hospital B), regardless of gender or age, and considering who had worked at the ICU for at least three months.

A self-administered, unidentified questionnaire was used to collect data. The analyzed variables were: profession, age, sex, time of work and oral hygiene (knowledge of the hospital protocol, performance of oral hygiene and frequency of oral hygiene).

The statistical analysis was descriptive, containing the absolute values and percentages in each variable.

## 3 Results and Discussion

The socio-demographic data of the ICU nursing professionals of the Hospital A and Hospital B are presented in Table 1.

**Table 1 -** Socio-demographic data of ICU nursing professionals of the hospitals

| Variables | Hospital A (n = 61) | Hospital B (n = 25) |
|---|---|---|
| **Profession** | | |
| Nurse | 9 (14.8%) | 5 (20%) |
| Nursing Technician | 52 (85.2%) | 20 (80%) |
| Age | 32.5 ± 6.9 years | 32 ± 7.8 years |
| **Sex** | | |
| Male | 16 (26.2%) | 8 (32%) |
| Female | 45 (73.8%) | 17 (68%) |
| Working time | 3.5 ± 3.6 years | 4.4 ± 5.9 years |

**Source:** Research data.

There was a greater number of professionals in Hospital A, because it presents 4 ICU (totaling 50 beds), in relation to Hospital B (1 ICU and 11 beds). More than 80% of the professionals were Nursing Technicians, with average age above 30, female and working in the ICU of the hospital, on the average, for over 3.5 years.

Regarding the oral care, the results are presented in Table 2.

**Table 2 -** Knowledge of oral hygiene protocol performed by the ICU nursing team of the hospitals

| Variables | Hospital A (n = 61) | | Hospital B (n = 25) | |
|---|---|---|---|---|
| | Yes | No | Yes | No |
| **Do you know the protocol?** | 42 (68.9%) | 19 (31.2%) | 16 (64%) | 9 (36%) |
| **Do you perform the oral hygiene?** | 61 (100) | 0 (0%) | 24 (96%) | 1 (4%) |
| **Frequency** | | | | |
| Sometimes | 4 (6.6%) | | 0 (0%) | |
| 1x/day | 51 (83.6) | | 24 (100%) | |
| 2x/day | 4 (6.6%) | | 0 (0%) | |
| 1s/week | 2 (3.3%) | | 0 (0%) | |

**Source:** Research data.

The results of this study demonstrate the lack of knowledge of the oral hygiene protocol by more than 30% of the Nursing staff, in both hospitals. Another factor that contributed to this result, for Hospital A, was the divergence in responses regarding the frequency with which the nursing professional performed the patients' oral hygiene, ranging from sometimes (6.6%) to 1x/week (3.3%). These data corroborate with other studies that reported that the ICU patients, most of times, do not have adequate oral condition, above all, by the lack of adequate oral hygiene techniques by the ICU staff and lack of Dentistry professionals in the ICU[4,11,12].

Our results are clinically important once that the mouth serves as true breeding sites for respiratory pathogenic microorganisms and the aspiration of oral secretion contributes to the VAP onset, and, consequently, to the increased mortality of patients in the ICU[2,4,6,9,13-16]. Other direct impacts, regarding the lack of oral hygiene procedures and increase of PAV, are on the increase in the time and hospitalization cost [2,5]. A study carried out by Oliveira et al.[17] showed that 70% of the studied organisms (respiratory pathogens) were found in the oral biofilm.

Another important result of this study was that even ignoring the hospital oral hygiene protocol all the ICU nursing professionals reported performing the patients' oral hygiene, with the exception of one professional (4%) of Hospital B. A study carried out by Araújo et al.[12] reported that only 42% of nursing professionals received training to perform oral hygiene, being that 74% of them consider the training inadequate.

Several studies have already demonstrated that the implementation of a oral hygiene protocol performed in the ICU, associated to prevention program that includes a set of interventions (elevation of the head of the bed, daily rest of sedation, daily assessment for intubation and prophylaxis for peptic ulcer and deep venous thrombosis), significantly reduced the rate of VAP[2,3,15]. This meant that various entities included the oral care as part of the *guidelines* for the VAP prevention, among them, the Center for Disease Control and Prevention and the International Consortium of Hospital Infection Control[5].

Therefore, Dentistry has a fundamental role in the ICU team, especially in the implementation of oral hygiene protocols.

## 4 Conclusion

Based on the methodology and the results analysis, it can be concluded that the oral hygiene protocol is unknown by more than a third of the ICU Nursing team of both surveyed hospitals.

## References

1. Ibrahim EH, Tracy L, Hill C, Fraser VJ, Kollef MH. The occurrence of ventilator-associated pneumonia in a community hospital: risk factors and clinical outcomes. Chest

2001;120(2):555-61.

2. Fields LB. Oral care intervention to reduce incidence of ventilatorassociated pneumonia in the neurologic intensive care unit. J Neurosci Nurs 2008;40(5):291-8.

3. Hutchins K, Karras G, Erwin J, Sullivan KL. Ventilator-associated pneumonia and oral care: a successful quality improvement project. Am J Infect Control 2009;37(7):590-7. doi: 10.1016/j.ajic.2008.12.007.

4. Souza AF, Guimarães AC, Ferreira EF. Avaliação da implementação de novo protocolo de higiene bucal em um centro de terapia intensiva para prevenção de pneumonia associada à ventilação mecânica. Rev Min Enferm 2013;17(1):177-84. doi http://www.dx.doi.org/10.5935/1415-2762.20130015

5. Lev A, Aied AS, Arshed S. The effect of different oral hygiene treatments on the occurrence of ventilator associated pneumonia (VAP) in ventilated patients. J Infect Prev 2015;16(2):76-81. doi: 10.1177/1757177414560252

6. Garcia R, Jendresky L, Colbert L. Reduction of microbial colonization in the oropharynx and dental plaque reduces ventilator-associated pneumonia. Am J Infect Control 2004;32(3):E101-2. doi: https://doi.org/10.1016/j.ajic.2004.04.152

7. Mori H, Hirasawa H, Oda S, Shiga H, Matsuda K, Nakamura M. Oral Care reduces incidence of ventilator-associated pneumonia in ICU populations. Int Care Med 2006;32(2):230-6.

8. Garcia R. A review of the possible role of oral and dental colonization on the occurrence of health care-associated pneumonia: underappreciated risk and a call for interventions. Am J Infect Control 2005;33(9):527- 41.

9. Amaral SM, Cortês AQ, Pires FR. Pneumonia nosocomial: importância do microambiente oral. J Bras Pneumol 2009;35(11):1116-24.

10. Morais TMN, Silva A, Avi ALRO, Souza PHR, Knobel E, Camargos LFA. A importância da atuação odontológica em pacientes internados em unidade de terapia intensiva. Rev Bras Ter Intens 2006;18(4):412-7.

11. Santos PSS, Mello WR, Wakim RCS, Paschoal MAG. Uso de solução buccal com sistema enzimático em pacientes totalmente dependentes de cuidados em unidade de terapia intensiva. Rev Bras Ter Intens 2008;20(2):154-9.

12. Araújo RJG, Oliveira LCG de, Hanna LMO, Correa AM, Carvalho LHV, Álvares NCF. Análise de percepções e ações de cuidados bucais realizados por equipes de enfermagem em unidades de tratamento intensivo. Rev Bras Ter Intens 2009;21(1):38-44.

13. Scannapieco FA, Stewart EM, Mylotte JM. Colonization of dental plaque by respiratory pathogens in medical intensive care patients. Crit Care Med 1992;20(6):740-5.

14. Fourrier F, Duvivier B, Boutigny H, Roussel-Delvallez M, Chopin C. Colonization of dental plaque: a source of nosocomial infections in intensive care unit patients. Crit Care Med 1998;26(2):301-8.

15. Schleder B, Stott K, Lloyd RC. The effect of a comprehensive oral care protocol on patients at risk for ventilator-associated pneumonia. J Adv Health Care 2002;4(1):27-30.

16. Zavascki AP, Barth AL, Fernandes JF, Moro AL, Gonçalves AL, Goldani LZ. Reappraisal of Pseudomonas aeruginosa hospital-acquired pneumonia mortality in the era of metallo-beta-lactamase-mediated multidrug resistance: a prospective observational study. Crit Care 2006;10(4):R114.

17. Oliveira LCBS, Carneiro PPM, Fisher RG, Tinoco EMB. A presença de patógenos respiratórios no biofilme bucal de pacientes com pneumonia nosocomial. Rev Bras Ter Intens 2007;19(4):428-43.