Treatment of the Oral Mucositis Severity in Patients of Bone Marrow Transplantation: A Meta-Analysis

Patricia Ferreira, MSN
Scientific Committee of the Brazilian Dermatology Nursing (SOBENDE), Universidade Federal de São Paulo - São Paulo Federal University and Albert Einstein Hospital - Brazil, Triangle, VA, USA

Monica Antar Gamba
Public Health, Universidade Federal de São Paulo - São Paulo Federal University, Triangle, VA, USA

Background: According to the Brazilian Association of Organ Transplantation, in the year of 2016, of which 1385 autologous and 802 allogeneic were realized. (Brazilian Association of Organ Transplantation, 2016). However, it is important to consider the collateral effects deriving from it, among which are protruded: marrow aplasia, nauseas, vomits, diarrhea, mucositis and the Illness of the Excerpt against the Host (DECH). The mucositis, the object of this study, occurs in approximately 75% of the patients that receive ablative chemotherapy or total body irradiation (Total Body Irradiation – TBI), as a conditioning to the bone marrow transplantation or of peripheral cells (Sonis, 2004). This complication is considered an important collateral effect due to its great repercussion in the general state of the patient, being significantly associated to the mortality increase of the patients submitted to BMT (Sonis, 2004).

This lack of sensible evidence limits the possibility of establishing the magnitude of the benefits, the risks and costs associated to prevention, to the diagnosis and to the treatment of mucositis and its complications. Before the exposed, the scope of the study is the investigation of the therapeutic measures for the oral mucositis in patients submitted to the BMT, as a manner of identifying the best clinical evidences to plan the nursing care to patients in this condition.

Aims: To identify the interventions needed to treat oral mucositis; and to evaluate the evidences of effectiveness of these interventions when performed in patients undergoing Bone Marrow transplantation (BMT).

Design: Systematic review with meta-analysis.

Setting: Cochrane Brazil and Nurse Department of São Paulo Federal University.

Method: A systematic review was carried out using the following key words: “mucositis”, and “bone marrow transplantation”. The period searched was from 1972 to 2017 in the following data bases: LILACS, MEDLINE, CINAHL, EMBASE; CENTRAL (Cochrane Central Register of Controlled Trials) and DARE (Database of Abstracts of Reviews of Effects). The investigated closing was the intensity reduction of the oral mucositis.

Findings: 3.839 abstracts were found, from which 19 were included in the systematic review and 17 were submitted to meta-analysis. Three topical and one systemic interventions presented statistically significant evidence in reducing mucositis severity: the use of Traumeel®, mouthwash with chlorhexidine, topical cryotherapy and amifostina. Cryotherapy presented better protective and therapeutical effect with relative risk of 0.03 (IC95%; p= 0.02). Discussion: In the realization of this meta-analysis, one of the difficulties found was the reduced number of controlled random study. Other important aspect to be considered are the methodological failures identified in the studies that approached the therapeutic intervention. The lack of accuracy in the measuring of this complication is also an impediment to the clinical research and, undoubtedly, to the implementation of oral mucositis’ prevention and control protocols. (Stockman, 2005) In this review we have found 19 studies that fulfilled the inclusion criteria; the number of studies could be greater if the accuracy in the evaluation of this complication was realized in a systematic and controlled manner. The better treatment found in this investigation, and very effective was the utilization of the topic ice or cryotherapy. A low cost therapeutic option, which does not offer risks, with high efficacy and easy clinical applicability. Probably due to its vasoconstrictor effect, provides a decrease of the citotoxical drugs concentration in the salivary glands and causes lesser cellular damage in the oral mucous membrane (Nikolett, 2005). The analyzed studies demonstrate efficacy in the reduction of the mucositis’ severity, with an important protecting effect, when used (RR= 0.03). In other uncontrolled study with patients in a specific conditioning regimen with Melfalane, this care has also revealed a protecting and therapeutic effect (Casciniu, 1994). One of possible restrictions that could be identified in these studies is that one of them has only used, in the
conditioning regimen, Melfalane, which restricts the possibility of generalization of this intervention for the other conditioning regimens utilized in the BMT, as well as Fluoracil that has its specific pharmacological proprieties. But, in both researches, cryotherapy has show a therapeutic effect for the signals and symptoms associated to mucositis and prophylactic to its severity. The efficacy of cryotherapy has also been proved in the mucositis’ treatment in patients with colon cancer submitted to chemotherapy with Fluoracil (Nikolett, 2005; Cascinu, 1994; McGuire, 2004). Among the 17 studies included in this meta-analysis it was not possible to include the nursing researches, which were referred to hygiene protocols, education to health, daily oral cavity self-care, as well as the protocols to technical scientific prepare of the nurses once they constitute narrative reviews and descriptive researches. Nevertheless, it is good to protrude that international algorithms for the mucositis’ handling in patients that receive antineoplastic treatment were proposed by Cochrane Collaboration researches (Worthington, 2011), National Comprehensive Cancer Network- NCCN (Bensinger, 2008), European Oncology Nursing Society- EONS (European Oncology Nursing Society, 2008) and from Oncology Nursing Society – ONS (Oncology Nursing Society, 2008), based on the opinion of specialists and studies with evidence analysis and recommendation grade. Comparing the treatments the treatments proposed in these recommendations with the results of this investigation, we can verify that some of the treatments recommended in this recommended in this research, such as, for instance, the Traumeel, were not mentioned in the NCCN, EONS and ONS’ protocols. On the other hand, Palifermin, recommended by NCCN, EONS and ONS, in this study and in the last Cochrane Collaboration (Worthington, 2011) review did not reveal statistical significance to the prevention and treatment of the oral mucositis. The mentioned protocols protrude the necessity of multiprofessional care to prevent or reduce the severity of the oral mucositis induced by chemo and/or radiotherapy, as well as the education of the patients, relatives and health team for the handing of this affection. **Conclusions:** The three topical interventions identified are essential for the management of oral mucositis for they are effective, don’t demand high technology resources and have low cost. Implications for Nursing: The careful incorporation of this new knowledge in nursing clinical practice opens a new perspective on evidence-based practice, in order to provide an effective clinical care to patients undergoing BMT that present oral mucositis.

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**Keywords:**

bone marrow transplantation, evidence based nursing and mucositis

**References:**


**Abstract Summary:**

The possibility to appropriate the consolidated knowledge that evidence the nursing cares’ effectiveness is one of the greatest challenges of the present days in order to assure the quality of attendance to cancer patients.

**Content Outline:**

1. Background
   1.1 Epidemiological data
   1.2 Bone Marrow transplantation Definition
   1.3 Side effects: Mucositis
   1.4 Evidence Based Nursing

2. Aims

3. Methods
   3.1 Systematic Review
   3.2 Meta-analysis

4. Conclusion
   4.1 Implications

**Primary Presenting Author**

Patricia Ferreira, MSN
Universidade Federal de São Paulo\ São Paulo Federal University and Albert Einstein Hospital - Brazil Scientific Committee of the Brazilian Dermatology Nursing (SOBENDE).
Assistant Research Scientist and Nurse
Triangle VA
USA

**Professional Experience:** PROFESSIONAL EXPERIENCE AS A PROFESSOR: - 2010 - 2016- Uninove University - Teaching Elderly Health care to undergraduate and graduate (Theoretical- practical classes). - 2008 - 2016- Universidade Federal de São Paulo (São Paulo Federal University)- Teaching Research Methodology, Evidence based Nursing (Cochrane method) - 2003 – 2012- São Camilo University-Teaching Fundamentals of Nursing (Theoretical- practical classes). Worked as a Coordinator of the nursing interchange between Brazil- Portugal and Brazil- Spain. PROFESSIONAL EXPERIENCE AS A
NURSE: 2016- Albert Einstein Hospital ( “Sociedade Beneficente Israelita Brasileira Albert Einstein”) - Working as a nurse at the Haemathological and Bone Marrow Transplant (BMT) Unit (Primary immunodeficiencies and autoimmune diseases) and Adult nurse in BMT Unit (Onco-haematological diseases) - 2000 -2012 São Paulo Federal University Hospital- Working as a nurse at the Haemathological and Bone Marrow Transplant Unit - 2000-2002 Albert Einstein Hospital – Working as a nurse at the Chemotherapy ambulatory

Author Summary: Master Degree in Oncology, Dermatology and Evidence based Health at São Paulo Federal University (UNIFESP). Practical Nurse for 18 years in Bone Marrow Transplantation and Chemotherapy. Professor for 14 years, taught Adult Health. Author of chapters in Nursing Diagnosis (2010-2014), wound repair and Evidence based Practical Nursing in Oncology and Dermatology in Brazil and USA.

Second Author

Monica Antar Gamba
Universidade Federal de São Paulo\ São Paulo Federal University
Public Health
Associate Professor
Triangle VA
USA

Professional Experience: Graduated in Nursing from Escola Paulista de Medicina, currently Federal University of São Paulo (1982), qualified in Public Health, specialist in Labor Nursing, Administration and Public Health Services by Fundação Getúlio Vargas and in Nursing and Dermatology by the Brazilian Society of Nursing In Dermatology- SOBENDE. He underwent technical improvement in the Diabetes Mellitus Prevention and Control Program, with emphasis on prevention and care of lower limb complications in Oxford, London and Manchester, UK. He holds a Master's Degree in Epidemiology from Preventive Medicine of the Federal University of São Paulo (UNIFESP) and a PhD in Public Health, an area of epidemiology by the Faculty of Public Health of the University of São Paulo.

Author Summary: Graduated in Nursing from Escola Paulista de Medicina, currently Federal University of São Paulo (1982), in Nursing and Dermatology by the Brazilian Society of Nursing In Dermatology-SOBENDE. He underwent technical improvement in the Diabetes Mellitus Prevention and Control Program, with emphasis on prevention and care of lower limb complications in Oxford, London and Manchester, UK.