Suggested Nursing Management Protocol for Patients Undergoing Bone Marrow Transplantation

Thesis

Submitted for Partial Fulfillment of the Master Degree Requirement of Medical Surgical Nursing (Critical Care)

By

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Asmaa Tawheed Mokhtar

Dedication

I would like to dedicate this thesis to my

father, mother, brother, sisters, friends, colleagues and the nurses participated in this study

to them I will never find adequate words to express my gratitude.

Also my beloved husband

Especially for dealing so patiently, tactfully during this work.

Abstract

Background: Bone marrow transplantation is a procedure used to replace damaged or destroyed bone marrow with healthy bone marrow stem cells. **Aim**: The aim of this study is to suggest nursing management protocol for patient undergoing bone marrow transplantation. **Methods:** A descriptive exploratory design will be utilized in for the conduction of this study The study will be conducted in the Bone Marrow Transplantation Unite at Nasser Institute Hospital. **Sample:** A convenience sample of 60 nurses working in the above mentioned setting will be involved in this study. **Tools: I**-Self-administered questionnaire: include the following: Demographic characteristics of the study nurses and nursing knowledge II- An observation checklist **Results:** The mean age of the study sample was 35.9±10.3. All of study nurses had unsatisfactory knowledge, while the majority had satisfactory practice. **Conclusion:** the current study revealed that there was statistically significant relation between nurses' demographic characteristics and total nurses' knowledge & practice. **Recommendations:** Further research studies are needed to focus on Evaluation the effect of training program about care of patients with BMT on the nurses' knowledge, practice and the patients' outcome.

Key words: Bone marrow transplantation – Nursing management – protocol.

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List of Abbreviations

Abb.	Full term

ACS .....*American Cancer Society*

AGvHD .....*Acute Graft vs. Host Disease*

AIDS .....*Acquired Immunodeficiency Syndrome*

Allo-HSCT.....*Allogeneic Hematopoietic Stem Cell Transplantation*

ANA .....*American Nurses Association*

ANC .....*Absolute Neutrophil Count*

ARDS.....*Acute Respiratory Distress Syndrome*

BMT.....*Bone Marrow Transplantation*

BOOP.....*Bronchiolitis Obliterans Organizing Pneumonia*

BOSB.....*Bronchiolitis Obliterans Syndrome*

CBC.....*Complete Blood Count*

CMV.....*Cytomegaloviruses*

CSFs .....*Chemotherapy or Colony Stimulating Factors*

CXR.....*Chest X-Ray*

DMSO.....*Dimethylsulfoxoid*

EBV.....*Epstein-Barr virus*

EKG .....*Electrocardiogram*

GvHD.....*Graft vs. Host Disease*

HIV .....*Human Immunodeficiency Virus.*

HLA .....*Human Leukocyte Antigens*

HPC .....*Hematopoietic Progenitors Cell*

HSCT.....*Hematopoietic Stem Cell Transplantation*

List of Abbreviations (Cont...)

Abb.	Full term
HTLV	*Human T-cell lymph Trophic Virus*
LAF	*Laminar Air flow*
MLC	*Mixed Lymphocyte Culture*
NPO	*Nothing per Mouth*
NTAF	*National Transplant Assistance Fund*
PPE	*Keeping personal protective Equipment*
RBCs	*Red Blood Cells*
VOD	*Veno-Occlusive Disease*
WBCEs	*White Blood Cells*
WHO	*World Health Organization*

INTRODUCTION

The bone marrow is used as a strategic treatment for a variety of immune deficiencies: oncological diseases, hematologic, oncohematological, metabolic disorders, e.g leukemia, lymphoma, myeloma, aplastic anemia, myelofibrosis, myelodysplastic syndromes, thalassemia major, primary cell immunodeficiency and germinative cell tumor among other potentially lethal diseases. The beginning of early hematopoietic stem cell transplantation (HSCT) in Brazil occurred in 1979 at the Hospital das clinical linked with the Federal University of Parana. Current studies show that the achievements of HSCT has been growing over the past 15 years. On average 40,000 HSCT are performed each year around the world ***(David, 2013)***.

The HSCT is not presented as a totally successful therapeutic method because it is an aggressive procedure that can allows the patients cure (complete disease remission) or cause his death. This contrast exists because of the immunosuppression caused by the pre-conditioning regimen for bone marrow transplantation (administration of chemotherapy drugs in high doses for treatment of main diseases) that leaves the patient vulnerable to complications that may cause death. Thus, around 40% of patients undergoing HSCT may have a fatal clinical outcome ***(Wong, Hackenberry, Wilson, Winkelstein and Schawartz, 2011).***

The HSCT can be divided into three types depending on the stem cell donor, or hematopoietic progenitors cell (HPC) where progenitor cells are derived from a genetically different donor, human leukocyte antigens (HLA) compatible or not related or not, HSCT autologous where the utilized progenitor cells belong to the patient and HSCT syngeneic where the utilized progenitor cells belong to the identical twin brother ***(Cancer Treatment Center of America, 2015).***

The HSCT process involves actions that are highly complex thus requiring a multidisciplinary team who is able to assist the patient and family in all stages of the process. Patients with HSCT go through six basic stages: 1- the decision to undergo the transplant, 2- the waiting for admission, 3- the conditioning regimen, 4- the transplantation, 5- the immunosuppression, and 6- the hospital discharge ***(William, Caroline, and Roy, 2011).***

In addition, the occurrence of pancytopenia, expectation of 'getting' bone marrow, gradual proliferation of cells (successful infusion of stem cells) and the potential for complications of various kind (can lead to death or affect significantly the quality of life) generate anxiety, tension on the patient, his family and health team that participates in the process ***(Black and Hawks, 2010).***