

MANAGEMENT OF CHEMOTHERAPY INDUCED NEUTROPENIA

*An essay submitted for partial fulfillment of master degree in
radiation oncology and nuclear medicine*

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LIST OF ABBREVIATIONS

ABLC	Amphotercin B Lipid Complex
AML	Acute Myeloid Leukemia
ANC	Absolute Neutrophilic count
ARDS	Acute Respiratory Distress Syndrome
ASCO	American Society of Clinical Oncology
BAL	Broncho Alveolar Lavage
BLC	Bone Lining Cell
BPA	Burst Promoting Activity
CBC	Complete Blood Count
CLL	Chronic Lymphocytic Leukemia
CPT 11	Campto (Irinotecan)
CRP	C Reactive Protein
CSF	Cerebro Spinal Fluid
CT	Computerized Tomography
CTCAE	Common Terminology Criteria for Adverse Events
DNA	Deoxy ribo Nucleic Acid
EDTA	Ethylene Diamine Tetra acetic Acid
EORTIC	European Organization for Research and Treatment of Cancer
ESBL	Extended Spectrum Beta-Lactamase
ESMO	European Society for Medical Oncology
FN	Febrile Neutropenia

GIT	Gastro Intestinal Tract
GM-CSF	Granulocyte Macrophage Colony Stimulating Factor
HICPAC	Hospital Infection Control Practices Advisory Committee
HSV	Herpes Simplex Virus
HZV	Herpes Zoster Virus
IATG	International Antimicrobial Therapy Group
IDSA	Infectious diseases Society of America
IL	Interleukin
LFT	Liver Function Test
MASCC	Multinational Association for Supportive Care in Cancer
MDS	Myelo Dysplastic Syndrome
MRI	Magnetic Resonance Imaging
MRSA	Methicillin Resistance Staph Aureus
NCCN	National Comprehensive Cancer Network
NHL	Non Hodgkin Lymphoma
PBSCT	Peripheral Blood Stem Cell Transplants
PCR	Polymerase Chain Reaction
PCT	ProCalciTonin
PI3K	Phosphatidyl Inositol- 3- Kinase/ AKT pathway
RDI	Relative Dose Intensity
RNA	Ribo Nucleic Acid
RR	Relative Risk
SCF	Stem Cell Factor

SCT	Stem Cell Transplantation
TEE	Trans Esophageal Echocardiogram
TEM 1	Type 1 beta Lactamase
TMP/SMX	TriMethoPrim/ SulphaMethoXazole
VP 16	VePsid (Etoposide)

MANGAGEMENT OF CHEMOTHERAPY INDUCED NEUTROPENIA

By

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Abstract:

Neutropenia (from Latin prefix neutro- and Greek suffix -πενία deficiency). Chemotherapy-induced neutropenia is not only a major risk factor for infection-related morbidity and mortality, but is also a significant dose-limiting toxicity in cancer treatment.

Fever is defined as a single oral temperature of 38.3°C (101°F) or a temperature of 38.0°C (100.4°F) for 1h. ***Neutropenia*** is defined as a neutrophil count of <500 cells/mm³, or a count of <1000 cells/mm³ with a predicted decrease to <500 cells/mm³.

The recognition of a low-risk subset has simplified management i.e. oral outpatient therapy of such patients. Conversely, the numbers of high-risk patients has actually increased as a result of widespread use of intensive chemotherapy and or peripheral blood stem cell transplantation, producing severe and prolonged myelosuppression. These patients still need immediate and a more directed approach to therapy in a hospital-based setting and this shall lead to decreased morbidity and mortality.



Introduction



Bone marrow's structure and functions



Febrile Neutropenia
