



**A Multicenter Comparative Study Comparing
Different Conditioning Protocols (Namely:
Cyclophosphamide, Melephalan, Etoposide versus
Bendamustine, Etoposide, Cytarabine, Melphalan)
in Autologous Stem Cell Transplantation among
Egyptian Patients with Hodgkin Disease**

Thesis

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in Clinical Hematology*

By

Yasmin Safar Abdalla

Under Supervision of

Prof. Dr/ Mohamed Osman Azzazi

*Professor of Internal Medicine and Hematology
Faculty of Medicine, Ain Shams University*

Prof. Dr/ Mohamed Mahmoud Moussa

*Professor of Internal Medicine and Hematology
Faculty of Medicine, Ain Shams University*

Dr/ Raafat Mohamed Abdel Fattah

*Consultant of Medical Oncology and Clinical Hematology
National Cancer Institute, Cairo University*

Faculty of Medicine - Ain Shams University

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سُبْحَانَكَ لَا عِلْمَ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Contents

Title	Page No.
List of Tables.....	5
List of Figures	7
List of Abbreviations.....	8
Introduction	- 1 -
Aim of the Work	22
Review of Literature	
▪ Hodgkin Lymphoma	23
▪ Refractory and Relapsed Hodgkin Lymphoma	167
▪ Autologous Bone Marrow Transplantation in Hodgkin Lymphoma	264
Patients and Methods.....	309
Results.....	323
Discussion	334
Summary.....	345
Conclusion	347
Recommendations	348
References	349
Arabic Summary	

List of Tables

Table No.	Title	Page No.
Table 1:	Staging of Hodgkin lymphoma: Ann Arbor staging system including Cotswold modifications	33
Table 2:	Frequency of Histologic Subtypes of Hodgkin Lymphoma According to the 2008 WHO Classification	36
Table 3:	Commonly used immunophenotypic markers for the differential diagnosis of Hodgkin lymphomas.....	44
Table 4:	Prognosis of Hodgkin lymphoma: the International Prognostic Index.....	60
Table 5:	Definition of HL risk groups according to the EORTC/LYSA and the GHSG.....	62
Table 6:	Differential diagnosis of Hodgkin lymphoma:	83
Table 7:	Prognostic subgroups in stage I–II.....	86
Table 8:	Common combination chemotherapy regimens for treatment of Hodgkin lymphoma	109
Table 9:	Selected studies in advanced stage NLPHL	147
Table 10:	Prognostic Factors in Hodgkin Lymphoma.....	176
Table 11:	Conventional salvage regimens in relapsed/refractory Hodgkin lymphoma.....	180
Table 12:	Selected novel agents in relapsed/refractory Hodgkin lymphoma	190
Table 13:	Summary of clinical trials combining BV with salvage regimens used to mobilize stem cells prior to autoSCT either in sequential or concurrent design	191
Table 14:	Currently ongoing clinical trials of BV in the treatment of HD	192
Table 15:	Ongoing checkpoint inhibitor trials in the treatment of HD	208
Table 16:	On-going trials in relapsed/refractory Hodgkin lymphoma	211

List of Tables cont...

Table No.	Title	Page No.
Table 17:	Retrospective studies of patients with relapsed or refractory HL undergoing HDT and/or ASCT	248
Table 18:	General indications for radiation therapy as part of salvage in patients with relapsed or refractory Hodgkin lymphoma.....	254
Table 19:	Eastern Cooperative Oncology Group (ECOG) scale of performance scale.....	310
Table 20:	CMV and BeEAM conditioning regimens	318
Table 21:	Patients' characteristics:.....	323
Table 22:	Regimen related toxicities	328
Table 23:	OS in both groups.....	330
Table 24:	DFS of the whole group of patients:	332

List of Figures

Fig. No.	Title	Page No.
Figure 1:	Male and female ratio in each group	324
Figure 2:	Disease status in each group.....	325
Figure 3:	Regimen related toxicities:	329
Figure 4:	Overall survival	330
Figure 5:	Overall survival	331
Figure 6:	Disease free survival	332
Figure 7:	Disease free survival.....	333

List of Abbreviations

Abb.	Full term
A-AVD	<i>Brentixumab vedotin, Adriamycin, vinblastine, Decarbazine</i>
ABMT	<i>Autologous bone marrow transplantation</i>
ABVD	<i>Doxorubicin [Adriamycin], bleomycin, vinblastine, dacarbazine</i>
AEs	<i>Adverse events</i>
A-GVHD	<i>Acute graft versus host disease</i>
AHCT	<i>Autologous hematopoietic stem cell transplant</i>
ALCL	<i>Anaplastic large cell lymphoma</i>
ALI	<i>Autologous lymphocytes infusion</i>
Allo- HSCT	<i>Allogeneic hematopoietic cell transplant</i>
AML	<i>Acute Myeloid Leukemia</i>
ASBMT	<i>American Society for Blood and Marrow Transplantation</i>
ATG	<i>Antithymocyte globulin</i>
Aug-ICE	<i>Augmented ifosfamide, carboplatin and etoposide</i>
BCCA	<i>British Columbia Cancer Agency</i>
BEAC	<i>Carmustine, etoposide, cytarabine, and cyclophosphamide</i>
BEACOPP	<i>Bleomycin, etoposide, doxorubicin, cyclophosphamide, vincristine, procarbazine and prednisone)</i>
BEAM	<i>BCNU, etoposide, cytarabine, melphalan</i>
BICR	<i>Blinded independent central review</i>
BiMAb	<i>Bispecific monoclonal antibody</i>
BM	<i>Bone marrow</i>
BMI	<i>Bone marrow involvement</i>
B-N-I	<i>BV + nivolumab+ ipilimumab</i>
BNLI	<i>British National Lymphoma investigation</i>
BR	<i>Bendamustine and rituximab</i>

List of Abbreviations cont...

Abb.	Full term
BrECADD	<i>Brentixumab, etoposide, cyclophosphamide, dacarbazine, dexamethasone</i>
BrESHAP	<i>Brentixumab Etoposide, prednisolone, cytarabine</i>
BSC	<i>Best supportive care</i>
Bu	<i>Busulfan</i>
Bu/Mel	<i>Busulphan, melphalan</i>
BuCy	<i>Busulfan and cyclophosphamide</i>
BuCYE	<i>Busulfan, Cyclophosphamide, Etoposide</i>
BuEM	<i>Busulphan, etoposide, melphalan</i>
BV	<i>Brentuximab vedotin</i>
BVB	<i>Brentuximab vedotin Bendamustine</i>
BV-DHAP	<i>Brentuximab vedotin-Dexamethasone, cytarabine, cisplatin</i>
CALGB	<i>Cancer and Leukemia Group B</i>
CAR-T	<i>Chimeric antigen receptor modified T</i>
CAYA	<i>Children, Adolescents and Young Adults</i>
CB	<i>Complete bleomycin</i>
CBV	<i>Cyclophosphamide, carmustine, etoposide</i>
CCI	<i>Charlson Comorbidity Index</i>
CHL	<i>Classical Hodgkin lymphoma</i>
ChIVPP	<i>Chlorambucil, Vinblastine, Procarbazine, Prednisolone</i>
CHOP	<i>Cyclophosphamide, Doxorubicin, Vincristine and Prednisolone</i>
CI	<i>Confidence Interval</i>
CIR	<i>Cumulative incidence of relapse</i>
CIRS	<i>Cumulative Illness Rating Scale</i>
CLL	<i>Chronic lymphocytic leukemia</i>
CMR	<i>Complete metabolic response</i>
CMT	<i>Combined modality therapy</i>
COG	<i>Children's Oncology Group</i>

List of Abbreviations cont...

Abb.	Full term
COPP	<i>Cyclophosphamide, Vincristine, Procarbazine and Prednisone</i>
CPIs	<i>Checkpoint inhibitors</i>
CR	<i>Complete response</i>
CRP	<i>C-reactive protein</i>
CS	<i>Clinical stage</i>
CSA	<i>Cyclosporine_A</i>
CT	<i>Computed tomography</i>
CTCL	<i>Cutaneous T-cell lymphoma cytotoxic</i>
CTLA-4	<i>Cutaneous T-cell lymphocyte antigen 4</i>
CVP/CEB	<i>Chlorambucil, Procarbazine, Prednisone, Cyclophosphamide, Etoposide, Bleomycin</i>
D5PS	<i>Deauville 5-point scale</i>
DFCI	<i>Dana-Farber Cancer Institute</i>
DFS	<i>Disease - free survival</i>
DHAP	<i>Dexamethasone, high dose cytarabine, cisplatin</i>
DLBCL	<i>Diffuse large B-cell lymphoma</i>
DLCO	<i>Diffusing Lung Capacity For Carbon Monoxide</i>
DLT	<i>Dose limiting toxicity</i>
DOR	<i>Duration of response</i>
DS	<i>Deauville scale</i>
EBER	<i>EBV-encoded RNAs</i>
EBMT	<i>European Society of Blood and Marrow Transplantation</i>
EBNA	<i>Epstein- Barr nuclear antigen 2</i>
EBV	<i>Epstein-Barr Virus</i>
EBVMCU	<i>EpsteineBarr virus-positive mucocutaneous ulcer</i>
ECOG	<i>Eastern Cooperative Oncology Group</i>
EFRT	<i>Extended Field RT</i>

List of Abbreviations cont...

Abb.	Full term
EFS	<i>Event - free survival</i>
EMA	<i>Epithelial membrane antigen</i>
EPO1	<i>Export protein exportin-1</i>
EQ-5D	<i>EuroQoL Five Dimensions Questionnaire</i>
ESHAOx	<i>Etoposide, methylprednisolone, high-dose cytarabine, and oxaliplatin</i>
ESHAP	<i>Etoposide, methylprednisolone, high dose cytarabine, cisplatin</i>
ESHL	<i>Early Stage Hodgkin Lymphoma</i>
ESMO	<i>European Society of Medical Oncology</i>
ESR	<i>Erythrocyte sedimentation rate</i>
EVA	<i>Etoposide, Vinblastine and Doxorubicin</i>
Ever-DHAP	<i>Everolimus -Dexamethasone, high dose cytarabine, cisplatin</i>
FDA	<i>Food and Drug Administration</i>
FDC	<i>Follicular dendritic cell</i>
FDG-PET	<i>Fluoro-2-deoxy-D-glucose positron emission tomography</i>
FEAM	<i>Fotemustine plus etoposide, cytarabine and melphalan</i>
FFPE	<i>Formalin fixed paraffin embedded</i>
FFS	<i>Failure free survival</i>
FFTF	<i>Freedom From Treatment Failure</i>
FI	<i>Functional imaging</i>
FIL	<i>Fondazione Italiana Linfomi</i>
Flu	<i>Fludarabine</i>
FNA	<i>Fine needle aspiration</i>
GC	<i>Germinal centre</i>
GDP	<i>Gemcitabine, dexamethasone, cisplatin</i>
GemBuMel	<i>Gemcitabine, busulfan, melphalan</i>
GemOX	<i>Gemcitabine, oxaliplatin</i>
GEP	<i>Gene expression profiling</i>
GHSC	<i>German Hodgkin Study Group</i>

List of Abbreviations cont...

Abb.	Full term
GLRM	<i>Gray-level run-length matrix</i>
GLSZM	<i>Gray-level size zone matrix</i>
GM-CSF	<i>Granulocyte Macrophage Colony Stimulating Factor</i>
GRFS	<i>Graft, Relapse free survival</i>
GVD	<i>Gemcitabine, vinorelbine, liposomal doxorubicin</i>
GVHD	<i>Graft versus host disease</i>
GVL	<i>Graft-versus-lymphoma</i>
GZL	<i>Gray zone lymphoma</i>
HBV	<i>Hepatitis B virus</i>
HCSF	<i>Hematopoietic colony stimulating factor</i>
HCT-CI	<i>Hematopoietic cell transplantation comorbidity index</i>
HCV	<i>Hepatitis C virus</i>
HDACI	<i>Histone deacetylase inhibitor</i>
HDCT	<i>High dose chemotherapy</i>
HDM	<i>High dose melephalan</i>
HID	<i>Haploidentical donor</i>
HIR	<i>High-intensity run emphasis</i>
HIV	<i>Human immunodeficiency virus</i>
HL	<i>Hodgkin lymphoma</i>
HLA	<i>Human leukocyte antigen system</i>
HR	<i>Hazard ratio</i>
HRS	<i>Hodgkin and Reed-Sternberg cells</i>
HSCT	<i>Hematopoietic stem cell transplantation</i>
HSPCs	<i>Hematopoietic stem / progenitor cells</i>
IB	<i>Incomplete bleomycin</i>
ICE	<i>Ifosfamide, carboplatin, etoposide,</i>
IFRT	<i>Involved Field Radiotherapy</i>
IGEV	<i>Ifosfamide, gemcitabine, vinorelbine, prednisone</i>

List of Abbreviations cont...

Abb.	Full term
IGEV	<i>Ifosfamide, gemcitabine, etoposide, vinorelbine</i>
IHC	<i>Immune Histochemistry</i>
IL13	<i>Interleukin 13</i>
IMiDs	<i>Immunomodulatory drugs</i>
INU	<i>Intensity nonuniformity</i>
IPS	<i>International Prognostic Index</i>
IRRC	<i>Independent radiological review committee</i>
IRRs	<i>Infusion related reactions</i>
ISRT	<i>Involved Site Radiotherapy</i>
ISRT	<i>Involved Site Radiotherapy</i>
ITT	<i>Intention to treat</i>
JAK/STAT	<i>Janus kinase / signal transducer and activators of transcription</i>
L&H	<i>Lymphocytic and histiocytic</i>
LDCHL	<i>Lymphocyte depleted classical Hodgkin lymphoma</i>
LDH	<i>Lactate dehydrogenase</i>
LEN	<i>Lenalidomide</i>
LP	<i>Lymphocyte-Predominant</i>
LRCHL	<i>Lymphocyte-rich classical Hodgkin lymphoma</i>
LS Chl	<i>Limited stage classic hodgkin disease</i>
LyG	<i>Lymphomatoid granulomatosis</i>
LySA	<i>Lymphoma Study Association</i>
MAC	<i>Myeloablative</i>
MCCHL	<i>Mixed cellularity Classical Hodgkin lymphoma</i>
MCNS	<i>Minimal change nephrotic syndrome</i>
MDACC	<i>MD Anderson Cancer Center</i>
MDS	<i>Myelodysplastic Syndrome</i>
MEL	<i>Melephalan</i>
MGZL	<i>Mediastinal grey zone lymphoma</i>

List of Abbreviations cont...

Abb.	Full term
MHCI	<i>Major histocompatibility complex class I</i>
MM	<i>Multiple myeloma</i>
MMAE	<i>Monomethylauristatin E</i>
MMG	<i>Mammogram</i>
MO	<i>Months</i>
MOP-ABV	<i>Mechlorethamine, Vincristine, Procarbazine plus Adriamycin], bleomycin, vinblastine</i>
MOP-BAP	<i>Mechlorethamine, Vincristine, Procarbazine plus Bleomycin, Doxorubicin, and Prednisone</i>
MOPP	<i>Mechlorethamine, vincristine, procarbazine and prednisone</i>
MOPP	<i>Mechlorethamine, Vincristine, Procarbazine plus Prednisone</i>
Mpfs	<i>Median progression-free survival</i>
MR	<i>Major response</i>
MRD	<i>Matched related donor</i>
MSD	<i>Matched sibling donor</i>
MSKCC	<i>Memorial Sloan Kettering Cancer Center</i>
MTD	<i>Maximum tolerated dose</i>
Mtor	<i>Mammalian target of rapamycin</i>
MTV	<i>Metabolic tumor volume</i>
MTX	<i>Methotrexate</i>
MUD	<i>Matched unrelated donor</i>
NCI	<i>National Cancer Institute</i>
NF	<i>Nuclear Factor</i>
NHBs	<i>Non Hispanic blacks</i>
NHL	<i>Non Hodgkin lymphoma</i>
NHWs	<i>Non Hispanic whites</i>
NK	<i>Natural killer</i>
NLPHL	<i>Nodular lymphocyte predominant Hodgkin lymphoma</i>

List of Abbreviations cont...

Abb.	Full term
NLPL	<i>Nodular lymphocyte predominant lymphoma</i>
NMA	<i>Non myeloablative</i>
NRM	<i>Non relapse mortality</i>
NS	<i>Nodular sclerosis</i>
NSCHL	<i>Nodular Sclerosis classic Hodgkin Lymphoma</i>
OAR	<i>Organ at risk</i>
ODBEP	<i>Vincristine, Doxorubicin, Bleomycin, Etoposide, Prednisone</i>
ORR	<i>Overall response rates</i>
Os	<i>Overall survival</i>
PBSCT	<i>Peripheral blood stem cell transplantation</i>
PD	<i>Progressive disease</i>
PD1	<i>programmed cell death 1</i>
PDCD1	<i>Programmed cell death cognate receptor</i>
PD - L1/2	<i>Programmed cell death ligands 1/2</i>
PEM	<i>Pembrolizumab</i>
PET	<i>Positron emission tomography</i>
PET/ MRI	<i>Positron emission tomography and magnetic resonance imaging</i>
PFS	<i>Progression Free Survival</i>
PI3K	<i>Phosphatidyl inositol 3-kinase</i>
P-ICE	<i>Panobinostat - ifosfamide, carboplatin, etoposide</i>
PMBL	<i>Primary mediastinal large B-cell lymphoma</i>
PMLBCL	<i>Primary Mediastinal Large B-cell Lymphoma</i>
PMR	<i>Partial metabolic response</i>
PN	<i>Peripheral neuropathy</i>
PR	<i>Partial remission</i>
PTCL	<i>Peripheral T-cell lymphoma</i>