wjpmr, 2021,7(5), 229 – 233.

SJIF Impact Factor: 5.922

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

Research Article

ISSN 2455-3301

WJPMR

MANAGEMENT OF CHEMOTHERAPY TOXICITIES INCLUDING ABVD OR BEACOPP ESCALATED IN THE TREATMENT OF HODGKIN LYMPHOMA

MESSOUNA Mohamed[1,3*], MOSSE Wilfred[2,3], NDA Guy[2,3], LKHOYALI Siham[1,3], ICHOU Mohamed[1,3] and ERRIHANI Hassan[1,3]

[1]Service d'Oncologie Médicale Institut National d'Oncologie de Rabat.
[2]Service de Radiothérapie Institut National d'Oncologie de Rabat.
[3]Université Mohammed v de Rabat.

***Corresponding Author: Dr. MESSOUNA Mohamed**
Service d'Oncologie Médicale Institut National d'Oncologie de Rabat.

Article Received on 17/03/2021 **Article Revised on 07/04/2021** **Article Accepted on 27/04/2021**

SUMMARY

Hodgkin lymphoma is cancer mainly affecting B lymphocytes.[1] In Morocco, it accounts for 1.6% of cases recorded during the period 2008 to 2012.[2] The cure rate has increased significantly in recent decades due to a combination of chemotherapy and radiation therapy.[1,3, 3] It is estimated that more than 80% of cases are curable[curable.[1,3,4,3,4] This increase in survival rates is the result of more effective treatments. However, their toxicities remain significant. In our study, we found 49% neutropenia, 26% anaemia, 26% thrombopenia, 35% nausea and vomiting, 32% diarrhea, 9.4% mucite, 39% peripheral neuropathy, 36% alopecia, 29% skin colour, 49.2% pain, 20.2% asthenia and anorexia, 32% diarrhea. There were more neutropenia and peripheral neuropathy in patients treated with BEACOPP ESCALADE, 53.8% vs. 46.8% and 50% vs. 32%, respectively. On the other hand, we found more digestive toxicities (nausea and vomiting, diarrhea) in patients treated with ABVD, respectively 38.5% versus 29% and 37.5% versus 23%).[3,4,5]

Grade I and II toxicities did not require discontinuation of treatment or postponement of chemotherapy and were treated as an outpatient, while grades III and IV were hospitalized with clinical and para-clinical examinations.

KEYWORDS: HODGKIN lymphoma, chemotherapy, toxicities, management.

INTRODUCTION

Hodgkin's lymphoma is cancer mainly affecting B lymphocytes.[1] In Morocco, it represents 1.6% of cases recorded during the period from 2008 to 2012.[2] The cure rate has greatly increased in recent decades due to the combination of chemotherapy and radiotherapy.[1,3, 3] It is estimated that more than 80% of cases are curable.[1,3,4,3,4] This increased survival rate is the result of more effective treatments. However, their toxicities remain significant. Through this study concerning one hundred and eight patients treated by ABVD or BEACOPP escalated to the National Institute of Oncology of rabat, we will analyze the various toxicities and the means used for their care, based on data from the literature.

MATERIALS AND METHODS

This is a retrospective study including one hundred and forty-eight patients treated for HODGKIN lymphoma between January 2017 and December 2020 at the National Institute of Oncology in Rabat. We were interested in the following parameters: age at diagnosis, sex of the patients, the stage of the disease, the circumstances of the findings, and the toxicities observed. The data was collected by an exhaustive search of the medical, radiological, and anatomopathological records available at the archives department of the National Institute of Oncology of Rabat. Statistical analyzes were carried out using Microsoft Office software. Excel.

RESULTS

The median age at diagnosis was 30 years with extremes ranging from 17 to 77 years.

Table 1: Distribution of patientsstaff according to age groups.

	Workforce	Percentage
17 – 35	87	58,8 %
36 – 50	29	19,6 %
Sup 50	32	21,6 %
Total	148	100 %

Sex:There were 48.6% female versus 51.4% male The sex ratio M / F is 1.05

Circumstances of discovery
34% of patients had supraclavicular lymphadenopathy, 25% axillary lymphadenopathy, 20% cervical lymphadenopathy, 14% inguinal lymphadenopathy, and 7% general signs (fever, weight loss, cough).

Stage: There were 10.1% stage I, 38.5% stage II, 32.4% stage III, and 18.9% stage IV

Treatment received
64.9% of patients were treated with ABVD while 35.1% were treated with escalated BEACOPP.

Patients treated with ABVD were all stage I or II while those treated with BEACOPP were stage III or IV.

Toxicities
There was 49% neutropenia, 26% anemia, 26% thrombocytopenia, 35% nausea and vomiting, 32% diarrhea, 9.4% mucositis, 39% peripheral neuropathy, 36% alopecia, 29% skin discoloration, 49.2% pain, 20.2% asthenia and anorexia, 32% diarrhea.

Among the patients treated with ABVD, there were 46.8% neutropenia, 27.1% anemia, 24% thrombocytopenia, 38.5% nausea and vomiting, 37.5% diarrhea, 32% peripheral neuropathy, 38.5% alopecia, 12.5% mucositis, 20% asthenia and anorexia, 51% pain and 29% skin discoloration.

On the other hand, among the patients treated with BEACOPP ESCALADE, we recorded, 53.8% of neutropenia, 25% of anemia, 30% of thrombocytopenia, 29% of nausea and vomiting, 23% of diarrhea, 50% of peripheral neuropathy, 29 % alopecia, 21% mucositis, 25% asthenia and anorexia, 62% pain and 29% skin discoloration.

Table 2: Patient characteristics for the study.

Characteristics		Numbers	Percentage
Sex	Men Women	76 72	51,4% 48,6%
Age	Median	30 years (17 – 77)	
Clinical signs	Axillary ADP Cervical ADP Inguinal ADP Supraclavicular ADP General signs(fever, weight loss, Cough)	37 29 20 51 11	25 % 20 % 14 % 34 % 7 %
Stage	I II III IV	15 57 48 28	10.2 % 38.5 % 32.4 % 18.9 %
Treatment protocol	ABVD BEACOPP ESCALADE	96 52	64.9 % 35.1 %
N=148			

Table 3: Distribution of the different toxicities according to their grade stage.

	Grade I	Grade II	Grade III	Grade IV	TOTAL
Neutropenia	18(18%)	37(51 %)	16(22%)	7(9 %)	73
Anemia	4(10%)	21(54%)	12(31%)	2(5%)	39
Thrombocytopenia	5(13%)	18(45%)	8(20%)	9(22%)	40
Nausea and vomiting	6(12%)	34(65%)	9(17%)	3(6%)	52

Diarrhea	7(14%)	24(49%)	13(27%)	5(10%)	49
Peripheral neuropathy	14(25%)	25(44%)	15(26%)	3(5%)	57
Mucositis	5(36%)	5(36%)	2(14%)	2(14%)	14

Table 4: Distribution of toxicities according to the protocol used.

		ABVD	BEACOPP	P
Neutropenia	Yes	45(46.8 %)	28(53.8 %)	0.418
	No	51(53.2%)	24(46.2%)	
Anemia	Yes	26(27.1 %)	13(25%)	0.783
	No	70(73.9 %)	39(75%)	
Thrombocytopenia	Yes	23(24 %)	16(30 %)	0.373
	No	73(76%)	36(70 %)	
Nausea and vomiting	Yes	37(38.5 %)	15(29 %)	0.235
	No	59(61.5%)	37(71 %)	
Diarrhea	Yes	36(37.5 %)	12(23 %)	0.069
	No	60(62.5 %)	40(77 %)	
Peripheral neuropathy	Yes	31(32 %)	26(50 %)	0.035
	No	65(68 %)	26(50 %)	
Alopecia	Yes	37(38.5 %)	15(29 %)	0.235
	No	59(61.5 %)	37(71 %)	
Mucositis	Yes	12(12.5 %)	2(4 %)	0.067
	No	84(87.5%)	50(96 %)	
Asthenia Anorexia	Yes	19(20 %)	11(21 %)	0.844
	No	77(80%)	41(79 %)	
Pain	Yes	49(51 %)	32(62 %)	0.219
	No	47(49%)	20(38 %)	
Skin coloring	Yes	28(29%)	15(29 %)	0.967
	No	68(71 %)	37(71 %)	

DISCUSSION

Hodgkin lymphoma is an infrequent B-cell lymphoid malignancy affecting 8,500 new patients per year and accounting for approximately 10.2% of all lymphomas in the United States.[1] In Morocco, Hodgkin lymphomas accounted for 1.6% of cases recorded during the period from 2008 to 2012. The proportion of women affected was practically equal to that of men (49.3% against 50.7% of cases respectively)[3] Thus the gross incidence was 1.9 per 100,000 inhabitants and standardized on the World and Moroccan population of 1.8 per 100,000 inhabitants.[2]

In our series, the average age at diagnosis is 30 years with extremes of 17 years -77 years and a sex ratio M / F equal to 1. We find these results in the studies of Ansel et al, André et al.[1.3]

At the time of diagnosis, 34% of patients presented with supraclavicular lymphadenopathy, 25% axillary lymphadenopathy, 20% cervical lymphadenopathy, 14% inguinal lymphadenopathy, and 7% general signs (fever, weight loss, cough). This corroborates with the study by Ansell et al[1]

There were 10.1% stage I, 38.5% stage II, 32.4% stage III, and 18.9% stage IV. André et al found similar results in their study. (3) 64.9% of the patients in our study were treated with ABVD versus 35.1% with ABVD.

Among the patients treated with BEACOPP, we found more haematological toxicities, namely, neutropenia (53.8% with p = 0.418), thrombocytopenia (30% with p = 0.373), more peripheral neuropathy (50% with p = 0.035), and more pain (62% with p = 0.21). However, there were more digestive toxicities in patients treated with ABVD, nausea and vomiting (38.5% p = 0.235), diarrhea (37.5% p = 0.069), mucositis (12.5% p = 0.067). These results were similar in the studies by Viviani et al, Bauer et al, André et al.[3,4,5,5]

Most neutropenia was grade I and II (69%) versus 21% grade III and IV.

Grade I and II neutropenia were treated on an outpatient basis with a postponement of the course of chemotherapy. On the other hand, grades III and IV were hospitalized and then underwent a clinical examination (taking of constants, physical examination), para-clinical and injection of granulocutary growth factors, stopping of chemotherapy. We find the same management strategies in the studies of Crawford et al, Rivera-Sagerdo et al, Vakkalanka and Link, Sureda et al, Escrihuela-Vidal et al.[6–10]

More than half of the patients (54%) in our study who presented with anemia were grade II.
Grade I anemia was treated on an outpatient basis with iron, folic acid, and VitB12 supplementation, without postponing the course of chemotherapy. On the other

hand, grades II, III, and IV were hospitalized and then underwent a clinical examination (taking of constants, physical examination), para-clinical and transfusion of red blood cells with a postponement of the course of chemotherapy. These management methods are similar to those found in the study by Viscweshwar et al.[11]

65% of thrombocytopenic patients in our study were grade I, II, III versus 22% grade IV.

Only the grade large IV were hospitalized and had a clinical examination (taking of constants, physical examination), para-clinical, and transfusion of platelet concentrate with discontinuation of chemotherapy while grade I, II, III were treated on an outpatient basis without postponement of chemotherapy. Kuter et al used the same means of management. [12]

Regarding nausea and vomiting, only 6% were grade IV against 94% grade I, II, III. The patients who presented with grade IV vomiting were hospitalized and then underwent clinical examination and anti-emetic treatment with a postponement of the course of chemotherapy, while the patients who had grade I, II, III vomiting were treated on an outpatient basis. with anti-emetics without postponing the course of chemotherapy. We find similar means of treatment in the study by Navari et al.[13]

10% of the patients in our study presented with grade IV diarrhea compared to 90% with grade I, II, III. Grade IV was hospitalized and then had a clinical examination (taking of constants, physical examination), para-clinical and anti-diarrheal treatment, hydration with a postponement of the chemotherapy course, while grades I, II, III had outpatient treatment with prescription of anti-diarrhea without postponing the chemotherapy session. (Navari et al).[13]

There were 5% of the patients who presented with grade IV peripheral neuropathies. These patients were hospitalized and then had a clinical and paraclinical examination, treatment with analgesics, and epileptics, and discontinuation of chemotherapy. On the other hand, patients with grade III peripheral neuropathies benefited from a 20% dose reduction, symptomatic treatment with analgesics, and anti-epileptics without postponing the course of chemotherapy. Concerning grades I and II, they were treated in outpatient with analgesics, anti-epileptics without dose reduction or postponement of the course of chemotherapy (Hou et al).[14]

More than half (72%) of the patients who presented with mucositis were grade I or II. They were treated on an outpatient basis with mouthwash without postponing or stopping the chemotherapy. On the other hand, the patients having presented grade III or IV mucositis were hospitalized and had a clinical and paraclinical examination, treatment by mouthwash, anti-fungal, parenteral diet, hydration with discontinuation of chemotherapy. (Lalla et al).[15]

CONCLUSION

Hodgkin lymphoma is a malignant hemopathy with a good prognosis, curable in 90% of localized forms and 80% of advanced forms.[1,3, 3] The therapeutic strategy is based on chemotherapy combined with radiotherapy. The toxicities generated by chemotherapy remain non-negligible. In our study, we found various toxicity (neutropenia, anemia, thrombocytopenia, nausea and vomiting, diarrhea, mucositis, asthenia and anorexia, peripheral neuropathy, skin discoloration, and hair loss) Grade I and II toxicities did not necessitate stopping a treatment or postponing chemotherapy and were treated on an outpatient basis, while grades III and IV benefited from hospitalization with clinical and para Clinics examinations . clinics.

RÉFÉRENCES

1. Ansell SM. Hodgkin lymphoma: 2018 update on diagnosis, risk-stratification, and management. Am J Hematol. Mai, 2018; 93(5): 704 -15.
2. Registre. Régistre National des cancers du grand Casablanca, 2008-2012.
3. André MPE, Carde P, Viviani S, Bellei M, Fortpied C, Hutchings M, et al. Long-term overall survival and toxicities of ABVD vs BEACOPP in advanced Hodgkin lymphoma: A pooled analysis of four randomized trials. Cancer Med. Sept, 2020; 9(18): 6565-75.
4. Bauer K, Skoetz N, Monsef I, Engert A, Brillant C. Comparison of chemotherapy including escalated BEACOPP versus chemotherapy including ABVD for patients with early unfavourable or advanced stage Hodgkin lymphoma. Cochrane Database Syst Rev. 10 août, 2011; 8(8): 007941.
5. Viviani S, Zinzani PL, Rambaldi A, Brusamolino E, Levis A, Bonfante V, et al. ABVD versus BEACOPP for Hodgkin's lymphoma when high-dose salvage is planned. N Engl J Med, 2011; 365(3): 203-12.
6. Crawford J, Dale DC, Lyman GH. Chemotherapy-induced neutropenia. Cancer, 2004; 100(2): 228-37.
7. Rivera-Salgado D, Valverde-Muñoz K, Ávila-Agüero ML, Rivera-Salgado D, Valverde-Muñoz K, Ávila-Agüero ML. Febrile neutropenia in cancer patients: management in the emergency room. Rev Chil Infectol, 2018; 35(1): 62 71.
8. Vakkalanka B, Link BK. Neutropenia and Neutropenic Complications in ABVD Chemotherapy for Hodgkin Lymphoma. Adv Hematol [Internet]. 2011 [cité 5 févr 2021], 2011. Disponible sur: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3112508/
9. Sureda A, Domingo-Domenech E, Gautam A. Neutropenia during frontline treatment of advanced Hodgkin lymphoma: Incidence, risk factors, and

management. Crit Rev Oncol Hematol. Juin, 2019; 138: 1-5.
10. Escrihuela-Vidal F, Laporte J, Albasanz-Puig A, Gudiol C. Update on the management of febrile neutropenia in hematologic patients. Rev Esp Quimioter, 2019; 32(Suppl 2): 55-8.
11. Visweshwar N, Jaglal M, Sokol L, Zuckerman K. Chemotherapy-related anemia. Ann Hematol. Févr, 2018; 97(2): 375 6.
12. Kuter DJ. Managing thrombocytopenia associated with cancer chemotherapy. Oncol Williston Park N. avr, 2015; 29(4): 282-94.
13. Navari RM. Managing Nausea and Vomiting in Patients Withwith Cancer: What Works. Oncol Williston Park N. 15 mars, 2018; 32(3): 121-5.
14. Hou S, Huh B, Kim HK, Kim K-H, Abdi S. Treatment of Chemotherapy-Induced Peripheral Neuropathy: Systematic Review and Recommendations. Pain Physician. Nov, 2018; 21(6): 571 92.
15. Lalla RV, Latortue MC, Hong CH, Ariyawardana A, D'Amato-Palumbo S, Fischer DJ, et al. A systematic review of oral fungal infections in patients receiving cancer therapy. Support Care Cancer Offoff J Multinatl Assoc Support Care Cancer. Août, 2010; 18(8): 985-92.