

Clinicopathological Characteristics of Hodgkin Lymphoma in Jordan

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Abstract

The aim of our study is to describe the clinical and pathological characteristics in patients with Hodgkin lymphoma, also to measure the prognosis of this disease between our patients. This retrospective study done at "King Hussein Medical Centre in Amman-Jordan. All patients diagnosed with Hodgkin lymphoma was included, 92 patients diagnosed with the disease between January 2010 and January 2013. No patient was excluded. Demographic and clinical characteristics of the patients included are: the age, sex, date of diagnosis, presenting symptoms, group of LN enlarged, response to treatment assessed by PET scan post 2 cycles and at the end of treatment. Results: 59 (61.7%) of patients was Male and 33 was female (35.9%), Age of patients ranged from 19 years old to 60 years with two peaks in 2nd and 4th decade, Cervical LN was the commonest lymph node enlarged at presentation in 87% of patients, 43.5% of our patients was staged as stage 4, B symptoms was documented in 26 of patients 28%, Extranodal disease was found in 40 patients most common involvement was lungs in 17 patients, Nodular sclerosis was the commonest histopathology in 73%, Complete remission with follow up PET scan was observed in 88% of patients, CR was noted more in young age group. Conclusion: "Hodgkin lymphoma one of uncommon malignancy in Jordan, with epidemiology same as developed countries, but the second age peak is younger than western countries, even most of patients presented with advanced stage disease it carry a very good prognosis with treatment and regular follow up.

Keywords: Lymphoma, Hodgkin, Clinicopathological.

1. Introduction

Hodgkin lymphoma (HL) is one of the few adult malignancies that can be cured in most patients. It is an uncommon malignancy accounting for approximately 1% of newly diagnosed malignancies in adults. Its incidence in Jordan is about 2/100,000 population per year. The disease is more common in male; it has a bimodal age distribution with peaks incidence noted in young adults and in people older than 60 years. Most patients with HL present with lymph (LN) node enlargement. The LN is usually painless, rubbery, and is most commonly the cervical group. It is sometimes detected incidentally during a physical examination for another disease. Fever > 38°C, night sweats, and loss of weight (more than 10% of bodyweight over last 6 months) are termed B symptoms. They have prognostic significance. B symptoms present in one third of cases at diagnosis. Diagnosis of Hodgkin's lymphoma done by excisional lymph node biopsy to the accessible lymph node, but in few cases mediastinoscopy or laparoscopic biopsy is done. Based on differences in the phenotype of the malignant cells and inflammatory background, HL is divided into classical Hodgkin lymphoma (nodular sclerosis, mixed cellularity, lymphocyte-rich, lymphocyte-depleted) and nodular lymphocyte-predominant lymphoma (NLPHL) which has a distinct, histological appearance, immunophenotype, and clinical outcome. In classical HL, the malignant cells are referred to as Hodgkin and Reed-Sternberg cells, while in NLPHL they are lymphocyte-predominant (LP) cells which sometimes termed popcorn cells. However the management is similar in all subtypes. Understanding of the pathophysiology of Hodgkin's lymphoma continues to develop. Hodgkin lymphoma is highly sensitive to chemotherapy and radiotherapy. Most of patients are cured with first-line therapy, with complete remission can be achieved in 80% of the patients, even in advanced stage. Staging of Hodgkin's lymphoma is based on modified Ann Arbor system. Patients with Hodgkin lymphoma are usually classified into 3 groups -early stage favorable (stage 1 or 2), early stage unfavorable (stage 1,2 with bulky disease B symptoms high ESR) and advanced stage disease (stage 3 or 4). It is useful for prognosis and treatment plan. The staging system reflects both the number of involvement of the lymph nodes and the presence of disease above or below the diaphragm, and involvement of extra lymphatic structures and spleen. Complete staging needs full history, an accurate physical examination, complete hematological and biochemical examinations with PET scan increasingly used to stage disease accurately and provide a baseline for subsequent remission assessment, and bone marrow biopsy. The aim of our study to describe the clinical and pathological characteristics of this type of lymphoma among patients treated in our centre and to focus on the prognosis of this disease which in contrast to thoughts of patients it carry a very good prognosis.

2. Methods

This study was done at “King Hussein Medical Centre in Amman-Jordan, which is the largest and most prestigious multidisciplinary medical institution in Jordan dedicated to providing the utmost in patient care and professional training. It is comprised of five centers: Al-Hussein Hospital, Royal Rehabilitation Center, Queen Alia Heart Institute, Princess Iman Center for Research and Laboratory Sciences, Prince Hussein Center for Urology and Organ Transplant, and Queen Rania Pediatric Hospital. Although a military hospital it offers its services to military personnel and their families as well as civilian citizens from Jordan and beyond. It has an excellent emergency department with three nearby helipads and is at the forefront of all mass casualty situations in the country. All patients diagnosed with Hodgkin lymphoma was included in our study, 92 patients diagnosed with the disease between January 2010 and January 2013. No patient was excluded, irrespective of age and performance status. Data was collected from medical files of the patients, demographic and clinical characteristics of the patients included the age, sex, date of diagnosis, presenting symptoms, group of LN enlarged, and B symptoms. Staging was performed on the basis of the Ann Arbor staging system based on PET scan or computed CT scan of neck, chest and abdomen with contrast, and Bone Marrow biopsy if advanced stage or in presence of B symptoms, Palpable masses and abdominal masses (CT scan or MRI) are defined as “bulky” when its largest dimension is ≥ 10 cm. Mediastinal mass is defined as “bulky” on a posteroanterior chest radiograph, when the maximum width is \geq one-third of the internal transverse diameter of the thorax at the level of T5–T6 vertebrae. All patients received standard treatment or therapy according to Royal Medical Services chemotherapy protocols. The protocol of treatment in our center is ABVD combination chemotherapy, followed by involved-field irradiation for patients with early-stage HL and ABVD in advanced stage disease, ESHAP or BEAM in relapsed disease. Response to treatment was assessed by PET scan post 2 cycles and at the end of treatment. Disease relapse was defined as disease progression occurring at least 3 months after achieving disease remission. Statistical analyses were conducted by SPSS 19. A p value < 0.05 was considered as statistically significant. The study plan was approved by the Institute Ethics Review committee.

3. Results

Observational study from January 2010 to January 2013. 92 patients were enrolled in this study. Clinicopathological characteristics of all patients is showed in table 1. 59 (61.7%) of patients was Male and 33 was female (35.9%), with male/female ratio 1.5/1. Age of patients ranged from 19 years old to 60 years with two peaks in 2nd and 4th decade. 56% of patients age from 20–29 years old, the mean age for male patients is 30 while in females is 23. p value is 0.13. Cervical LN was the commonest lymph node enlarged at presentation in 87% of patients while axillary, mediastinal and paraortic in 4% in each. 43.5% of our patients was staged as stage 4, stage 3 in 22.8%, only 10% staged as stage 1 and 23.9% stage 2, which mean advanced stage disease in 66%, early stage in 34%, with no significant difference between males and females with more advanced stage in nodular sclerosis histopathology subtype. B symptoms was documented in 26 (28%) of patients, B symptoms was more common in higher staged disease group (p value 0.004) and in patients with positive BM involvement with lymphoma, with no sex difference. Extra-lymphatic disease was found in 40 patients, most common involvement is lung in 17 patients, bone in 17 patients, liver in 9 patients, bone marrow in 8 patients, pleura in 1 patient, and splenic involvement in 33 patients. Nodular sclerosis was the commonest histopathology in 73%, mixed cellularity in 14%, lymphocyte rich in 6 patients while NLPD in 6 patients. Lymphocyte depleted was not documented in our study. There was no significant difference between sexes and age groups. 8 patients had BM involvement on BM biopsy with more percentage of B symptoms in positive BM biopsies. Bulky disease was noted in 12 patients, all was nodular sclerosis histopathology subtype with no significant difference between male and female. Mean PCV is lower in stage 4 mean 37 while in stage 1 is 41 (p value 0.24). Complete remission (CR) with follow up PET scan was observed in 88% of patients (CR1 in 79% CR2 in 9%), resistant disease in 7 patients and death in 4 patients. Complete remission was noted more in female patients with 93.9% female patient was in complete remission whether in CR1, CR2 while in males 84.7% achieved CR1,2. CR was noted more in young age groups; 100% complete remission in teens, 94.2% in 2nd decade, 75% in third age group, 42% in fifth age group. Less complete remission is noted in higher stage of disease. CR in stage 4 is 82% while in stage 1,2 reached 96% (p value 0.008).

4. Discussion

Hodgkin lymphoma is uncommon malignancy involving lymph nodes and lymphatic system, usually in adulthood have bimodal distribution which was showed in our study with the first peak from age of 20–30 another peak is 40–50 which seems younger age than in western countries in which the second peak around the age of 55 years. The disease is more frequent in men than in women, with ratio 1.5/1 Male predominance with reported male to female ratios of 1.7:1, 1.2:1, and 3.1:1 is a worldwide phenomenon in Hodgkin lymphoma, most our patients presented with cervical LNE, followed by axillary LNE, then paraaortic and mediastinal

lymph nodes. Most our patients presented with cervical LNE, followed by axillary LNE, then paraaortic and mediastinal lymph nodes. Most patients presented with advanced staged disease which reached 40% of patients presented with stage 4 and only 12% presented with stage 1. Systemic symptoms are present at diagnosis in about one third of cases, and among them fever is most common and associated with higher clinical stage, and BM involvement, which may explain the pathology of these symptoms. In our study 73% of patients showed Nodular Sclerosis histopathology sub type, mixed cellularity in 14% lymphocyte rich 6.5% while lymphocyte depleted was not documented in our study that indicate the rarity of this histopathology subtype. NLPD was seen in 6.5% of patient which is similar to the Western literature in general. There was no significant difference between sexes and age group in histopathology types. Extra-lymphatic disease was found in 40% patients most common is involvement of lung then bone, liver, bone marrow and, pleura in 1 patient. Splenic involvement was seen in 33 patients. With this extra-nodal disease mean more frequent systemic symptoms, higher clinical stage and worse prognosis in contrast with exclusive nodal involvement. Follow up PET scan was done at end of therapy and used to assess the remission of disease. Second line treatment given with non-remission or incomplete remission or relapsed disease according to our hospital treatment guidelines. Complete remission was noted in 88% of patients, with better response among young and female patients. Limitations of our study is short follow-up interval ranged 1-3 years, also the few cases in NLPD and lymphocyte depleted histopathology subtypes.

5. Conclusions

Hodgkin lymphoma one of uncommon malignancy in Jordan, with epidemiology same as developed countries, but the second age peak is younger than western countries, even most of patients presented with advanced stage disease it carry a very good prognosis with treatment and regular follow up.

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