

**Clinico –pathological patterns of gastric lymphoma in western region of Saudi Arabia**

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**Abstract: Objective:** To determine the clinic-pathological patterns of gastric lymphoma among patients in our region. **Methods:** This is a retrospective review of 23 patients having gastric lymphoma at King Abdulaziz University Hospital, Jeddah, Kingdom of Saudi Arabia from January 2005 to May 2010. The patient's medical records were reviewed for demographic details, clinical presentations, and histopathological diagnoses and management. **Results :** 23 patients were included, mean age of our patients 51.5 years ( range 23 - 80 years) . 16 were Males (69.5%) and 7 females (30.5%). Commonest symptom was pain in 21 (91.3%) , followed by loss of weight in 20 (86.9%). Diagnosis was made as clinical mass by CT abdomen in 13 (56.5%) , by bone marrow in 7 (30.4%) and by upper GI endoscopy in 1 (4.3%) . Lymphoma commonly involved gastric body in 12 (52.1%), followed by antrum in 8 (34.7%). B-cell type were found in 18 (78.2%), followed by Non Hodgkin (NHL) in 16 (69.7%). Common stage at presentation was stage III in 52.1%. Majority were high grade in 60.8%. Surgical treatment was done in 30.4% and non-surgical in 69.5%. **Conclusion :** Most of our patients of gastric lymphoma present with abdominal pain and weight loss and at younger age. Most of the patients were in stage III and were of high grade so, great index of suspicion should be there when patient presents with abdominal pain and weight loss and extensive investigations like CT scan Abdomen and bone marrow should be done at early stage as endoscopy (OGD) failed to diagnose majority of the patients.

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**Key words:** Gastric , MALT , *H-pylori*, Lymphoma

**1. Introduction**

Lymphoma in gastrointestinal tract were described by Dr. Thomas Billroth in 1871. Extranodal lymphoma occurs commonly in gastrointestinal tract which is 5 to 20%<sup>[1]</sup>. Lymphoma can arise from any part of gastrointestinal tract but commonest site is stomach which is followed by small bowel and ileocecal region<sup>[2]</sup>. Gastric lymphoma accounts for 3 to 5% of all malignant tumors of stomach<sup>[3,4]</sup>. The exact etiology for the development of gastric lymphoma is not known but the role of *H-pylori* in the development of MALT lymphoma has been demonstrated. It is a chronic infection may induce malignant transformation via B-cell proliferation<sup>[5]</sup>. Hepatitis B plays a role in development of NHL<sup>[6]</sup>. Primary gastric lymphoma is usually associated with HTLV-1 infected endemic areas<sup>[7]</sup>. Gastric lymphoma is common in males who are above 50 years of age. They present with non-specific clinical symptoms and common complaints are epigastric pain, nausea, vomiting and weight loss. Constitutional symptoms are not common and complications like bleeding and perforation are rare. Dawson's modified criteria is used for diagnosis of lymphoma which is no palpable adenopathy or mediastinal adenopathy on radiological examination, normal peripheral blood smear, disease confined to GI tract at laparotomy or by diagnostic imaging, lymphadenopathy being regional or

retroperitoneal and a lack of hepatic or splenic involvement<sup>[8]</sup>. The survival are depend on the stage , the resectability of the tumor, level of invasion of the tumor limited, tumor size, and histopathological type.

**2. Material and Methods**

This is a retrospective study of twenty three gastric lymphoma patients who were treated at King Abdulaziz University Hospital, Jeddah, Saudi Arabia, from January 2005 to May 2010. Gastric lymphoma patients were studied using patient's file records, admissions details, investigations and management which was either surgical or non-surgical. Demographic details, common presenting complaints and co-morbid conditions were studied. Patient's records were analysed for investigations which were carried out and treatment given. Histological slides were reviewed for the grades of lymphoma and staging patterns was also analysed. Staging were done according to International workshop staging system for Gastrointestinal NHL In which Stage I :Tumor confined to the GIT. Single primary site or multiple non-contiguous lesions. Stage II: Tumor extending in abdomen from primary GI site, with nodal involvement . Stage III : Penetration of serosa to involve adjacent organs or tissues. Stage IV : Disseminated extranodal involvement or a GIT Lesion with sub diaphragmatic nodal involvement<sup>[9]</sup>. Patients

were followed in surgical clinic after surgical or non surgical treatment for five years to identify for any complication and recurrence.

### 3.Results :

In our study, 23 patients were included, mean age of our patients 51.5 years ( range 23 - 80 years) . 16 were Males (69.5%) and 7 were females (30.5%) . Commonest symptom was pain in 21 (91.3%), followed by loss of weight in 20 (86.9%), loss of appetite in 9 (39.1%), hematemesis in 7 (30.5%), vomiting in 4 (17.3%), melena in 6 (26%) and dysphagia in 2 (8.6%) patients .7 patients were diabetics (30.5%), 6 patients were hypertensive (26%), 6 patients were have Hepatitis B (26%) and one patient has CVA( 4.3%) and one patient was smoker (4.3%). Diagnosis was made as clinical mass in 4 (17.3%) ,by upper GI endoscopy in 1 (4.3%), by ultrasound abdomen in 5 (21.7%), by CT abdomen in

13 (56.5%) and by bone marrow in 7 (30.4%) patients (Table 1). Lymphoma commonly involved gastric body in 12 (52.1%), followed by antrum in 8 (34.7%), fundus in 6 (26%), pylorus in 4 (17.3%) and duodenum in 2 (8.6%) ( Figure 1 ). B-cell type were found in 18 (78.2%), followed by Non Hodgkin (NHDL) in 16 (69.7%). MALT lymphoma in 8 (34.7%) and differentiated lymphoma in 4 (17.3%) patients ( Figure 2). Common stage at presentation was stage III in 12 (52.1%) , followed by stage II in 8 (34.7%), stage IIII in 2 (8.6%) and stage I in 1 (4.3%) patient (Figure 3). Majority were high grade in 14 (60.8%), and low grade were 9 (39.1%) patients (figure 4). Surgical treatment was done in 7 (30.4%) and non-surgical (chemotherapy) in 16 (69.5%).14 of patients (60.8%) were followed up to 5 years, 5 patients (21.7%) up to 3 years and 2 patients (8.6%) had lost the follow up.

**Table 1 : Demographic data of the patients**

Age			
	Range	23-80 years	
	Mean	51.5%	
Sex		Number	Percentage
	Males	16	69.5%
	Females	7	30.5%
Symptoms		Number	Percentage
	Pain	21	91.3%
	Loss of weight	20	86.9%
	Vomiting	4	17.3%
	Loss of appetite	9	39.1%
	Hematemesis	7	30.5%
	Melena	6	26%
	Dysphagia	2	8.6%
Co-morbidities		Number	Percentage
	DM	7	30.5%
	Hypertension	6	26%
	Hepatitis -B	6	26%
	CVA	1	4.3%
	Smoking	1	4.3%
Diagnosis		Number	Percentage
	Clinical mass	4	17.3%
	OGD	1	4.3%
	USG Abdomen	5	21.7%
	CT Abdomen	13	56.5%
	Bone marrow	7	30.4%
Treatment		Number	Percentage
	Surgery	7	30.4%
	Non surgical	16	69.5%

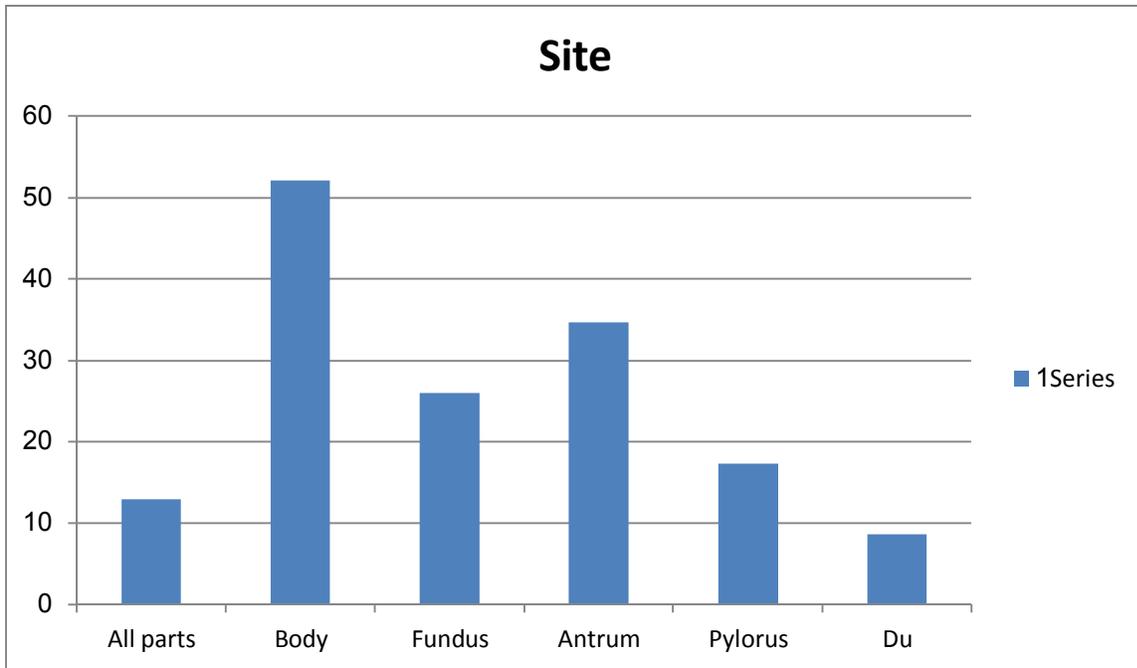


Figure 1 : site of gastric lymphoma

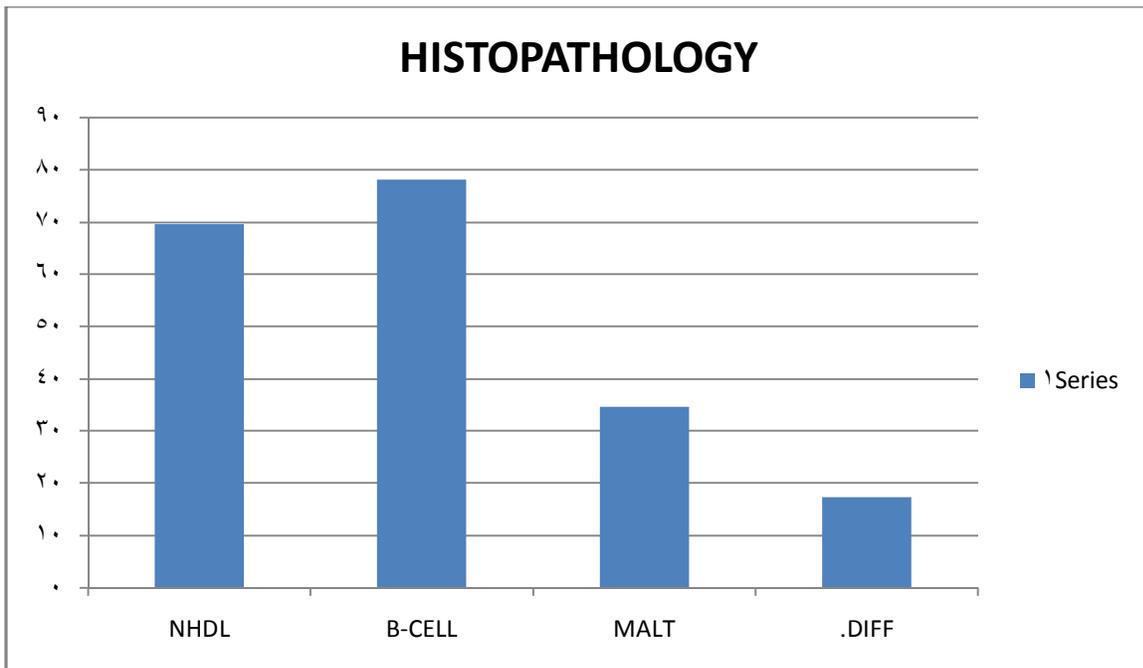


Figure 2 : Histopathological types of gastric lymphoma

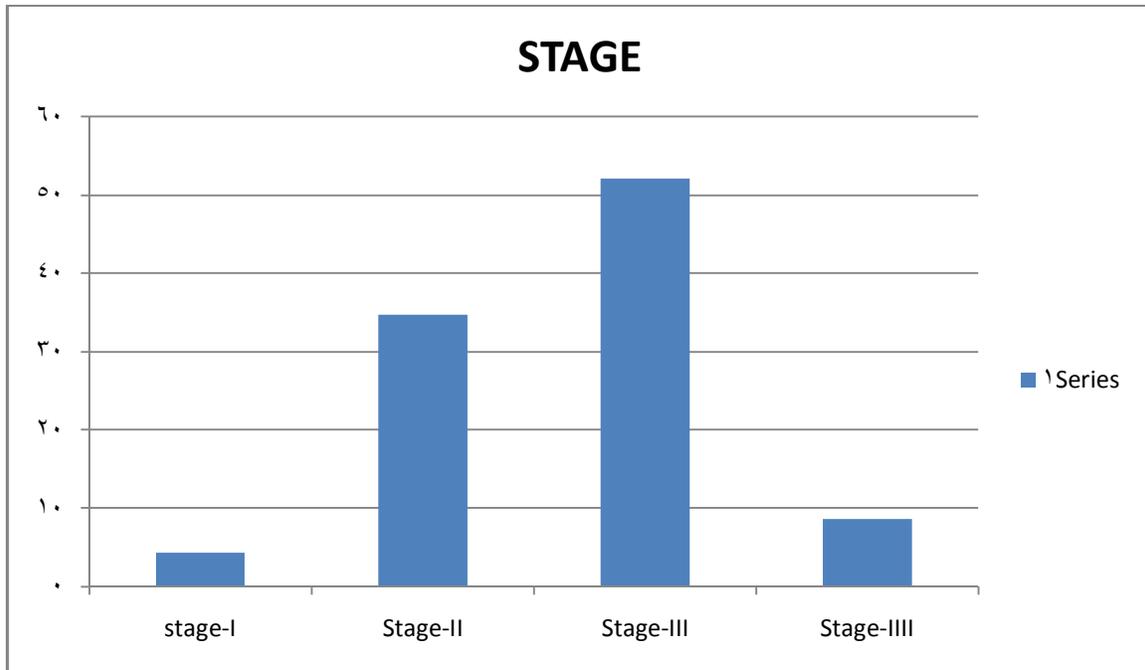


Figure 3 : stage of gastric lymphoma at time of diagnosis

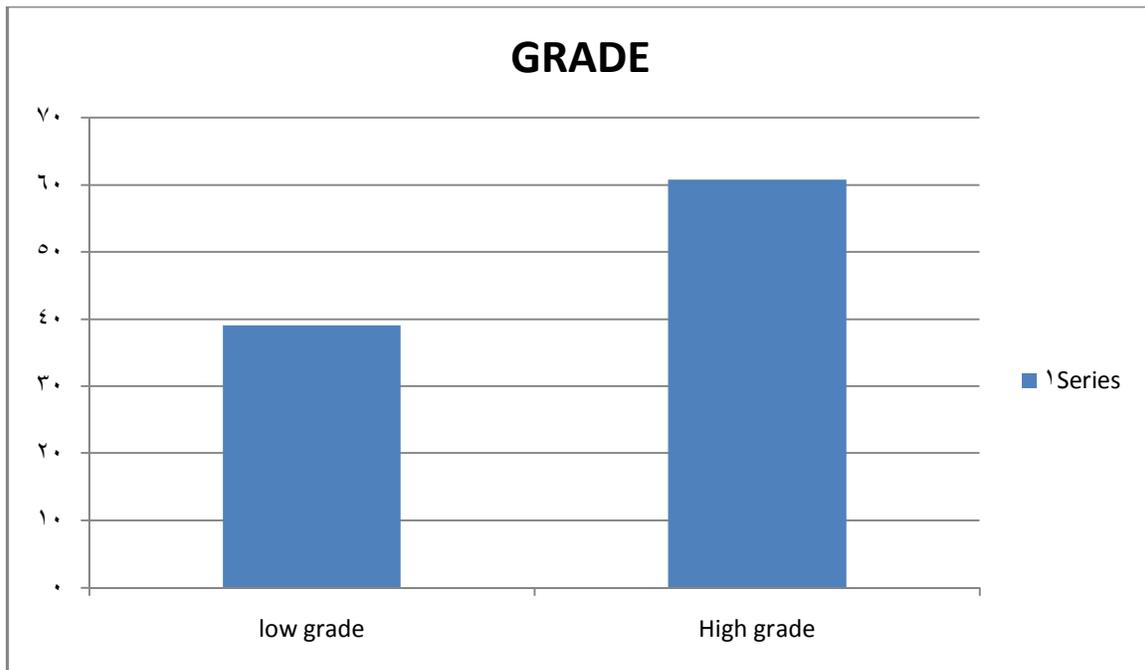


Figure 4 : Grade of gastric lymphoma

**4.Discussion**

Most of gastric lymphoma are B-Cell origin and are divided into high and low grade tumors. Infection with H pylori is a primary risk factor for gastric lymphoma. *H. Pylori* infection is thought to initiates

an inflammatory response via production of specific antigen. It also produces specific T cells that produce interleukin -2 and other cytokines that induce proliferation of B cells [10, 11, 12]. These monoclonal lymphoproliferation of B cells subsequently

transforms into MALT lymphoma<sup>[13, 14]</sup>. Treatment with anti *H Pylori* medication has regressed gastric lymphoma<sup>[15,16]</sup>. Primary gastric lymphoma patients commonly present with epigastric pain followed by weight loss, anorexia, vomiting, melena, hematemesis, anemia, tiredness, breathlessness, backache and nausea. Diagnosis can be done by endoscopy which may reveal superficial ulcers to diffuse thickening and irregularities of mucosal folds or polypoid mass, gastric fold hypertrophy, cobble stone appearing mucosa and multiple tumor nodules. Multiple biopsies can be taken for diagnosis. Endoscopic ultrasound can help in diagnosis regarding depth of tumor invasion and enlarged perigastric lymph nodes. CT scan of chest, abdomen and pelvis may detect abnormalities in 70 % of cases<sup>[17]</sup>. Positive emission tomography scan have been increasingly used for diagnosis of gastric lymphoma along with Gallium -67 scintigraphy. Bone marrow biopsy is used in many cases of gastric lymphoma. Primary gastrointestinal lymphoma can be classified using Ann Arbor classification which is, stage I tumor confined to GI tract, stage II tumor spread to regional lymph nodes, stage II tumor with nodal involvement beyond regional lymph nodes, stage III tumor with spread to other abdominal organs like liver and spleen, stage IV tumor spread beyond abdomen like chest and bone marrow. Gastric lymphoma is found commonly in distal two third of stomach, along posterior wall and lesser curvature. Gastric outlet obstruction is rare and characteristic feature is grayish lesion which is soft or rubber like and superficial erosions of mucosa may be present.

We found mean age of our patients 51.5 years and males were in majority. Arenas *et al.* reported median age of diagnosis at 60 years and males 50% and females 50%<sup>[18]</sup>. Augustin *et al.* reported mean age of 54 years and males 50% and females' 50%<sup>[19]</sup>. Berry *et al* reported mean age of 62 years and males 51% and females 49%<sup>[20]</sup>.

In our study, the commonest symptom was pain, followed by loss of weight, loss of appetite, hematemesis, vomiting, melena and dysphagia. Most common symptom at presentation was abdominal pain and loss of appetite as reported by Koch *et al.*<sup>[21]</sup>. Diagnosis was made by CT abdomen in most of patients in our study. The commonest site of gastric involvement in was the body followed by the antrum. Commonest type was B-cell followed by NHL, Malt and differentiated. Common stage at presentation was stage III, followed by stage-II. Majority were high grade. Most of the patients were treated non-surgical (69.5%) by chemotherapy. Aviles *et al.* reported 93% complete remission following chemotherapy and 5 year survival in 75% of patient and recurrence of 65%<sup>[22,23]</sup>. Taal *et al.*

reported 71% 5 year survival following radiotherapy and recurrence rate of 19.5%.<sup>[24]</sup>

### Conclusion:

Most of our patients of gastric lymphoma present with abdominal pain and weight loss and at younger age but are not diagnosed clinically as gastric lymphoma unless CT scan abdomen or Bone marrow was done as OGD failed to diagnose majority of the patients. Most of the patients were in stage three and were of high grade so, great index of suspicion should be there when patient presents with abdominal pain and weight loss and extensive investigations like CT scan Abdomen and bone marrow should be done to arrive at diagnosis.

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