

## ***Introduction***

The gastrointestinal tract is the most common site for involvement by extra-nodal lymphomas that account for 15% of all Non-Hodgkin lymphoma patients. While virtually any type of lymphoma may involve the gastrointestinal tract, they may be of B- or T-cell type with primary gastrointestinal Hodgkin's disease being extremely uncommon. The most common site of involvement is the stomach (60%) followed by small intestine (30%) (except in Middle East, where small intestinal tumors are the most common). Lymphomas of the esophagus are rare. The most common type of gastrointestinal lymphoma in essentially all sites is a diffuse large B-cell lymphoma (*Isaacson et al., 2001*).

Gastric lymphoma usually common in the age group of 50 – 60 years with most patients have a history of long standing gastritis. 50% are of mucosa-associated lymphoid tissue type (also called MALTomas) and the rest are usually diffuse large B-cell lymphoma type (*Koch et al., 2006*).

MALTomas are now categorized as extra nodal marginal zone B-cell lymphoma. MALT lymphomas have a well understood etiopathological pathway with predominant association of Gastric MALT with *Helicobacter Pylori* infection exists. As *Helicobacter Pylori* infection leads to chronic gastritis due to bacterial products like ammonia, this leads to polyclonal multiplication of B-cell in face of antigenic stimulation. This leads to DNA translocation in some B-cells (as t(11:18)) which leads to independent multiplication and lymphomatous transformation. Other risk factors include *Campylobacter jejuni*, *Borrelia burgdorferi*, *Chlamydia psittaci* and HIV infection and long term immunosuppressant drugs intake (*Liu et al., 2004*).

Almost all patients are symptomatic at the time of presentation. Patients may present with abdominal pain, nausea, anorexia, weight loss, vomiting or bleeding. Approximately, 20% may present with bleeding and 2% with perforation (*Lewin et al., 2004*).

Investigations include computerized tomography, Barium swallow and upper gastrointestinal endoscopy. Tissue diagnosis by endoscopy, endoscopic ultrasound guided biopsy, endoscopic submucosal resection or laparotomy is needed to detect specific markers on malignant cells by immunohistochemistry (as CD20 and cytokeratin) (*Mendelson and Fremoye, 2005*).

MALT lymphomas are unlike other nodal indolent lymphomas as they are amenable to cure because they often respond to *Helicobacter pylori* eradication, very radiosensitive and have less distant spread (*Shchepotin et al., 1996*).

Radiotherapy is the most commonly used modality for definitive treatment of gastric MALT lymphoma, while surgical role confined to perforation, bleeding, obstruction or salvage after chemotherapy and radiotherapy failure. Chemotherapy received only in symptomatic patients with bulky abdominal disease who is not suitable for radiotherapy. However in high grade lymphomas chemotherapy forms the mainstay of treatment (*Crump et al., 2007*).

Intestinal lymphomas account for 30% of all primary gastrointestinal lymphomas and 20% of all small intestinal malignancies. They commonly associated *Clostridium jejuni* infection and gluten sensitive enteropathy (*Crump et al., 2007*).

Intestinal lymphomas may be of B-cell type (60- 70%), T-cell type (20- 30%) or immunoproliferative small intestinal disease (IPSID) (previously called "Mediterranean lymphoma") (*Isaacson et al., 2001*).

The patient may present with pain, anorexia, diarrhea or weight

loss, with obstruction and perforation is more common than in gastric lymphoma (30- 40%) (*Crump et al., 2007*).

T-cell lymphomas are more notorious for association with obstruction and perforation (30- 50%), protein losing enteropathy or anemia and thrombocytosis (*Kalaoka et al., 2002*).

In B-cell lymphomas, chemotherapy is the mainstay of treatment. However, primary surgery is commonly required for establishing diagnosis and staging of the disease, reducing tumor bulk or to deal with complications as perforation or obstruction. Radiotherapy result in better local control and is needed when there is bulky residual disease or partial resection (debulking) (*Novackovic et al., 2006*).

T-cell lymphomas commonly managed by surgery followed by chemotherapy. However T-cell lymphomas have poor prognosis as they are often diagnosed in advanced stages, multifocal and have poor response to chemotherapy (*d'Amore et al., 1994*).