Section: Pathology

Original Research Article

# NON-HODGKIN LYMPHOMAS OF THE GASTROINTESTINAL TRACT: AN INSTITUTIONAL EXPERIENCE

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## Abstract

**Background:** Gastrointestinal tract is the commonest extranodal site involved by lymphomas, most of which are Non-Hodgkin Lymphomas. GI lymphomas constitute 1%–4% of all GI malignancies, 10%–15% of all Non-Hodgkin's lymphomas (NHL), and 30%–40% of all extranodal NHLs. The aim of this study was to analyse the clinical profile and histopathological subtypes of GI Non-Hodgkin Lymphomas in a tertiary care center. **Materials and Methods:** This was a retrospective study done in the Department of Pathology, A. J. Institute of Medical Sciences & Research Centre, Mangalore for a duration of 3 years from January 2019 to December 2021. All the cases of Non Hodgkin Lymphomas of the Gastrointestinal tract received in the histopathology laboratory were included in the study. Clinical history, endoscopic, radiology findings and histopathology of all the cases were reviewed and analysed. **Result:** A total number of 16 primary Gastrointestinal lymphomas were encountered in the study. Males were more commonly affected (69%). The mean age of patients was 60 years, and the most common presenting complaint was pain abdomen followed by dyspepsia, loss of weight, loss of appetite and hematemesis. Stomach was the most common site (56.25%) and the most common histologic subtype was Diffuse large B cell lymphoma (93.75%). **Conclusion:** GI mucosal biopsies are among the most commonly received specimens in the histopathology laboratory. It is essential to accurately diagnose the various lymphoid neoplasms and other malignancies as differentiating them is crucial in further management.

## INTRODUCTION

Gastrointestinal tract is the commonest extranodal site involved by lymphomas, most of which are Non-Hodgkin Lymphomas. GI lymphomas constitute 1%–4% of all GI malignancies, 10%–15% of all non-Hodgkin's lymphomas (NHL), and 30%–40% of all extranodal NHLs.[1,2,3,4,5,6] The most common site is the stomach, followed by small bowel and colorectum.[7,8] Oesophageal lymphoma is exceptionally rare. These are more common in elderly (6th decade) and have a slight male preponderance. The patients with GI lymphomas may present with non-specific symptoms such as dyspepsia or bloating to more specific symptoms such as abdominal pain, nausea, emesis, GI bleeding, diarrhoea, weight loss or bowel obstruction. Endoscopic evaluation of the patient and adequate biopsies can provide a definitive diagnosis to the patient thereby proceeding for appropriate therapy.

## MATERIALS AND METHODS

This is a retrospective study done in the Department of Pathology, A. J. Institute of Medical Sciences & Research Centre, Mangalore for a duration of 3 years from January 2019 to December 2021. All the cases of Non Hodgkin Lymphomas of the Gastrointestinal tract received in the histopathology laboratory were included in the study. Clinical history, endoscopic, radiology findings and histopathology of all the cases were reviewed and analysed.


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## RESULTS

A total number of 16 primary Gastrointestinal lymphomas were encountered in the study of which 14 were endoscopic biopsies and 2 were resection specimens. In this study males (69%) outnumbered females (31%) [Figure 1]. The age of patients ranged from 29 to 80 years with mean age being 60 years. The most common presenting complaint in our study was pain abdomen followed by dyspepsia, loss of weight, loss of appetite and hematemesis [Figure 2]. One patient presented with altered bowel habits. Stomach was the most common site (56.25%) followed by terminal ileum, ascending colon, small bowel & rectum. The most common endoscopic finding was presence of nodular mucosa followed by mucosal ulceration. The most common histologic subtype was Diffuse large B cell lymphoma (93.75%). A further categorisation into germinal center B cell subtype and non-germinal center subtype was done in 11 cases of which 90% showed a Germinal centre B cell subtype immune profile. We also had one case of gastric MALT lymphoma.

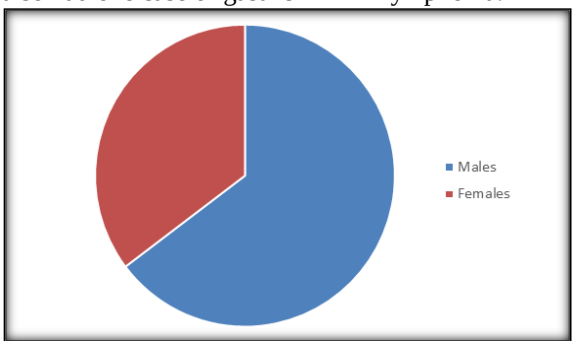


**Figure 1: Gender wise distribution of cases**

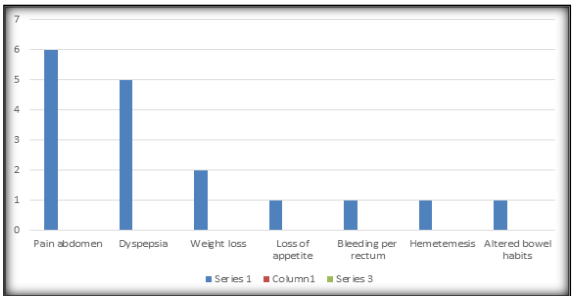


**Figure 2: Bar diagram representing the presenting complaints**

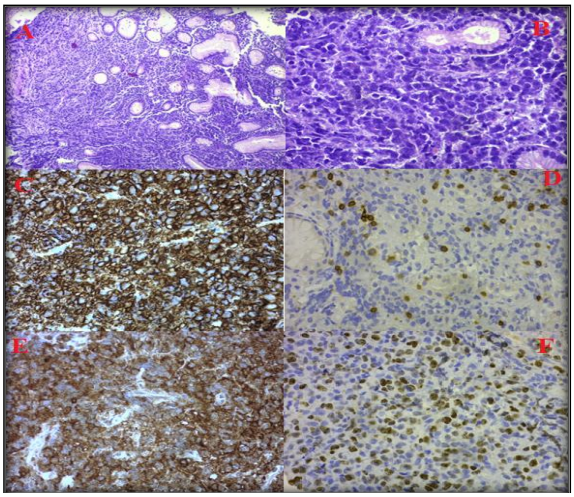


**Figure 3: Gastric DLBCL A) Sheets of atypical lymphoid cells infiltrating in between gastric glands (H&E, 10x) B) High power view shows sheets of large cells with scant cytoplasm (H&E, 40x) C) CD20 - Diffuse strong positive D) CD3 – Highlights mature T lymphocytes in background E) CD10 Positive in neoplastic cells F) Ki 67 60-70%**

**Table 1: Summary of GI lymphomas in the study**

| Age (years) | Sex | Presenting complaints | Site | Diagnosis | IHC |
|---|---|---|---|---|---|
| 29 | M | Bleeding per rectum | Rectum | DLBCL | EMA- LCA+ CD20+ CD30- Ki67 70% |
| 65 | M | Pain abdomen, fatigue, weight loss | Stomach | DLBCL | PanCK-LCA+ CD20+ CD10+ CD30- Ki67 80% |
| 52 | M | Weight loss, loss of appetite | Small bowel | DLBCL | LCA- CD20+ CD3- CD10- BCL6 - Mum1 weak+ Ki67 70% |
| 80 | M | Dyspepsia, hematemesis | Stomach | DLBCL | LCA+ CD3- CD20+ CD10+ Mum1 + Ki67 80% |
| 42 | F | Dyspepsia | Stomach | DLBCL | LCA+ CD20+ Bcl2+ CD10+ Ki67 80% |
| 45 | M | Pain abdomen, | Stomach | DLBCL | PanCK- LCA+ CD20+ CD3- CD10+ Ki67 80% |
| 69 | M | Dyspepsia | Stomach | MALT lymphoma | CD20+ CD3 - Ki 67 20% |
| 55 | F | Pain abdomen | Terminal ileum & Caecum | DLBCL | PanCK-LCA+ CD3- CD20+ CD10- PanCK- Ki67 80% |
| 69 | M | Weight loss, loss of appetite | Ascending colon | DLBCL | LCA+ CD20+ CD3- CD10- BCl6+ MUM1- CD30- Ki67 90% |
| 56 | F | Pain abdomen | D3 | DLBCL | PanCK- LCA+CD20+ CD3- Ki67 80% |
| 65 | M | Dyspepsia | Stomach | DLBCL | PanCK- LCA+ CD20+ CD3- CD10+ BCl2+ Ki67 60% |
| 66 | M | Pain abdomen | Stomach | DLBCL | Pan CK -CD20+ CD3- BCl2+ BCl6-CD10+ Ki67 50% |
| 60 | M | Pain abdomen | Stomach | DLBCL | Pan CK- CD20+ CD3-CD10+ Ki67 80% |
| 64 | F | Pain abdomen | Ileum | DLBCL | PanCK- LCA+CD20+ CD3- Ki67 90% |
| 74 | F | Altered bowel habits | Terminal ileum & Caecum | DLBCL | PanCK- LCA+ CD20+ CD3- CD10+ Ki67 70% |
| 75 | M | Dyspepsia | Stomach | DLBCL | PanCK- LCA+ CD20+ CD3- CD10+ Ki67 90% |


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## DISCUSSION

Primary Gastrointestinal Non-Hodgkin Lymphoma is a heterogenous lesion in terms of patient presentation, histological subtypes, staging and treatment outcomes.[9] In our study males were more commonly affected than women and the mean age was 60 years which was comparable to other studies by Yildrim P et al,[10] Koch et al,[11] Ding D et al,[12] and Ducreux et al.[13] Also in our study Diffuse Large B Cell Lymphoma was the commonest subtype encountered. Similar findings were seen in other studies. DLBCL is defined as a neoplasm of medium to large B lymphoid cells with nuclear size greater than or equal to that of a macrophage or more than twice the size of normal lymphocytes arranged in a diffuse growth pattern.[11,14,15,16,17] DLBCL constitutes up to 70% of all gastric lymphomas. Primary gastric DLBCL may arise de novo or represent transformation from antecedent low-grade B-cell lymphoma, usually MALT lymphoma.[18] Microscopic examination shows diffuse proliferation of lymphoid cells forming sheets that intersect between gastric glands and abnormally expand the lamina propria. Immunohistochemically, the large cells show diffuse CD20 expression and high Ki67. A further classification into Germinal center B cell subtype (CD10+ or CD10-/BCL6+ / MUM1 -) and Non-Germinal Center B cell subtype (CD10- / BCL6 – or CD10- / BCL6+ / MUM1+) may be done using the Hans algorithm. In our study 90% of cases were Germinal centre B cell subtype. The most common diagnostic dilemma encountered in our study was distinction of the lymphomas and their variants from a poorly differentiated carcinoma. A positive CD45 and negative cytokeratin expression is helpful for distinguishing the two.

The treatment modalities may include surgery, chemotherapy and radiotherapy or the combinations of these. Although the role of surgery in PGI-NHL is still controversial, the most preferred treatment modality is combination chemotherapy with surgery.[10]

## CONCLUSION

GI mucosal biopsies are among the most commonly received specimens in the histopathology laboratory. It is essential to accurately recognize the various lymphoid neoplasms within the GI tract in conjunction with the clinical and endoscopic findings. Recognition of these lymphomas, their morphology, immunophenotype, and genetic/molecular features provides appropriate clinical management and treatment.

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