Study of Incidence of Malignancy in Upper Gastrointestinal tract in Dyspeptic Patients

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Abstract
Objective: The aim of study was to evaluate the results obtained by histopathological examination of biopsy material of dyspeptic patients who had undergone endoscopy. A correlation with causative agents and various risk factors with the results of histopathological examination was done.

Material and Methods: A total 600 dyspeptic patients were studied and among them 26 cases with malignancy have been included in the present study. Biopsy materials of the present study were collected from Sri Krishna Medical college, Muzaffarpur. Selection of cases for study in the present work was done by taking detailed history and clinical examination of patient suffering from dyspepsia. Prior to endoscopic biopsy all the relevant routine investigations (CBC, ESR, LFT, KFT, BT, CT, Blood sugar and Viral markers) were performed. Upper GIT endoscopy was done in selected patients suffering from dyspepsia and suspected biopsy material was taken out and kept in fixative(10 % formal saline).Tissue was processed and stained by H & E stain for histopathological examination.

Result: Malignacy in dyspeptic patient was more in male than female and more common in those whose staple food was rice (46.15 %). Adenocarcinoma of stomach was most common malignancy (92.3 %) followed by squamous cell carcinoma of oesophagus (7.69 %).

Conclusion: The present study has pointed out important epidemiological contribution in the incidence of upper GIT malignancy in dyspeptic patients.

Keywrod: Dyspepsia, endoscopic biopsy, upper GIT malignancy.

Introduction
Dyspepsia is a term used broadly to describe episodic or persistent upper abdominal symptoms believed to arrive from the upper digestive tract. Symptoms may or may not be related to eating and may induce epigastric pain, bloating, fullness, belching, nausea or early satiety.
Dyspepsia is prevalent in more than one fourth of general population and is the frequent reason for medical consultation. There are several factors, which causes dyspepsia in general population. Acute, self limited indigestion may be caused by over eating, eating too quickly, eating high fat foods, eating during stressful situations or...
drinking too much alcohol or coffee. Many medications cause dyspepsia, including aspirin, NSAIDs, antibiotics (metronidazole, macrolides), corticosteroids, digoxin, theophyllin, iron and narcotics.

Over 40% of patients who present with dyspeptic complaints to the physicians are concerned about underlying malignancy. Yet the prevalence of malignancy among such patient is only 1-5% (Mc. Quaid et al).

The management of patients presenting with dyspepsia remains controversial. It has been shown to be cost effective and associated with long term improvement to test and treat young patients positive for H. Pylori, who present to the primary case setting. Prompt endoscopy is recommended in patients over age 50 years, those with alarm symptoms and those who have failed previous therapy. (Lee MG, 2004)

The incidence rate of gastrointestinal tract cancer in India is moderate to low, and it varies significantly from region to region. In both sexes, the carcinoma of oesophagus is the commonest site followed by stomach, gall bladder, rectum, colon, liver and pancreas. (Mohan Das K.M. et al)

Stomach cancer incidence rates are much lower in India than elsewhere, but the stomach remains one of the 10 leading sites of cancer in both sexes of India. (Rao D.N. et al 2002)

The incidence of small intestinal malignancies is very low (1-5% of G.I.T. malignancies in India). (Cohen et al)

Materials and Methods

Present study was conducted in the Department of pathology, Sri Krishna Medical College, Muzaffarpur, with the help of Department of Medicine, during the period of September 2018 to August 2019.

Altogether 600 dyspeptic patients were studied. Selection of cases for study in the present work was done by taking detailed history and clinical examination of patients suffering from dyspepsia. Prior to endoscopic biopsy, all the relevant routine investigations (CBC, ESR, LFT, KFT, BT, CT, Blood Sugar, and Viral markers) were performed. Upper GIT endoscopy was done in selected patients suffering from dyspepsia and suspected biopsy material was taken out and kept in fixative (10% formal saline). Tissue was processed and stained by H & E stain. Now the slide was examined under low and high power of light microscope respectively.

Results

Out of 600 dyspeptic patients, only 26 i.e. 4.3% were diagnosed as having malignancy. This study shows that maximum incidence of malignancy is in the 6th decade followed by 5th decade and more common in male than female (2:1). The most common site of malignancy is pyloric antrum (73.07%). Adenocarcinoma of stomach is most common malignancy (92.30%) followed by squamous cell carcinoma of oesophagus (7.69%).

Table I Showing incidence of various types of dyspepsia (with or without malignancy) in dyspeptic patients

<table>
<thead>
<tr>
<th>Type of dyspepsia</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional dyspeptic patients</td>
<td>318</td>
<td>53</td>
</tr>
<tr>
<td>Organic dyspeptic patients</td>
<td>282</td>
<td>47</td>
</tr>
<tr>
<td>Organic dyspeptic patients without malignancy</td>
<td>256</td>
<td>42.7</td>
</tr>
<tr>
<td>Organic dyspeptic patients with malignancy</td>
<td>26</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Table II Showing incidence of upper GIT malignancy in dyspeptic patients in different age groups:

<table>
<thead>
<tr>
<th>Age in year</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>00</td>
<td>00%</td>
</tr>
<tr>
<td>11 – 20</td>
<td>00</td>
<td>00%</td>
</tr>
<tr>
<td>21 – 30</td>
<td>01</td>
<td>3.8%</td>
</tr>
<tr>
<td>31 – 40</td>
<td>03</td>
<td>11.5%</td>
</tr>
<tr>
<td>41 – 50</td>
<td>07</td>
<td>26.9%</td>
</tr>
<tr>
<td>51 – 60</td>
<td>12</td>
<td>46.10%</td>
</tr>
<tr>
<td>61 &amp; above</td>
<td>03</td>
<td>11.5%</td>
</tr>
</tbody>
</table>

Table III Showing sex incidence in upper GIT malignancy in dyspeptic patients

<table>
<thead>
<tr>
<th>Sex</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>18</td>
<td>69.2%</td>
</tr>
<tr>
<td>Female</td>
<td>08</td>
<td>30.7%</td>
</tr>
</tbody>
</table>
Table IV  Showing incidence of upper GIT malignancy in different socio-economic groups

<table>
<thead>
<tr>
<th>Socio-economic group</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper class</td>
<td>02</td>
<td>7.69%</td>
</tr>
<tr>
<td>Upper middle class</td>
<td>05</td>
<td>19.2%</td>
</tr>
<tr>
<td>Lower middle class</td>
<td>08</td>
<td>30.7%</td>
</tr>
<tr>
<td>Lower class</td>
<td>11</td>
<td>42.3%</td>
</tr>
</tbody>
</table>

Table V  Showing duration of symptoms in dyspeptic patients with upper GIT malignancy:

<table>
<thead>
<tr>
<th>Duration of month</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 2</td>
<td>00</td>
<td>00%</td>
</tr>
<tr>
<td>3 – 5</td>
<td>02</td>
<td>7.6%</td>
</tr>
<tr>
<td>6 – 8</td>
<td>15</td>
<td>57.6%</td>
</tr>
<tr>
<td>9 – 11</td>
<td>07</td>
<td>26.9%</td>
</tr>
<tr>
<td>12 &amp; above</td>
<td>02</td>
<td>7.69%</td>
</tr>
</tbody>
</table>

Table VI  Showing various site of involvement of upper GIT malignancy in dyspeptic patients based on endoscopic findings:

<table>
<thead>
<tr>
<th>Site</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardia</td>
<td>00</td>
<td>00%</td>
</tr>
<tr>
<td>Body</td>
<td>05</td>
<td>19.23%</td>
</tr>
<tr>
<td>Antrum</td>
<td>19</td>
<td>73.07%</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>02</td>
<td>7.69%</td>
</tr>
</tbody>
</table>

Table VII  Showing incidence in relation to histopathological types of upper GIT malignancy in dyspeptic patients

<table>
<thead>
<tr>
<th>Site</th>
<th>Histopathological findings</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stomach</td>
<td>Adenocarcinoma</td>
<td>24</td>
<td>92.3%</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>Squamous cell carcinoma</td>
<td>02</td>
<td>7.69%</td>
</tr>
</tbody>
</table>

Table VIII  Showing incidence of upper GIT malignancy in patients in relation to food habits:

<table>
<thead>
<tr>
<th>Type of food</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staple food rice</td>
<td>12</td>
<td>46.15%</td>
</tr>
<tr>
<td>Staple food rice &amp; wheat</td>
<td>06</td>
<td>23.07%</td>
</tr>
<tr>
<td>Staple food wheat</td>
<td>03</td>
<td>11.54%</td>
</tr>
<tr>
<td>Food with plenty of animal protein</td>
<td>05</td>
<td>19.23%</td>
</tr>
</tbody>
</table>

Table IX  Showing incidence of upper GIT malignancy in relation to addiction in dyspeptic patients:

<table>
<thead>
<tr>
<th>Type of addiction</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>11</td>
<td>42.30%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>08</td>
<td>30.76%</td>
</tr>
<tr>
<td>Tobacco chewing</td>
<td>05</td>
<td>19.23%</td>
</tr>
<tr>
<td>None</td>
<td>02</td>
<td>7.69%</td>
</tr>
</tbody>
</table>

Table X  Showing different symptoms in the present series of patients (n=26):

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain abdomen</td>
<td>24</td>
<td>92.30%</td>
</tr>
<tr>
<td>Nausea &amp; vomiting</td>
<td>14</td>
<td>53.84%</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>01</td>
<td>3.84%</td>
</tr>
<tr>
<td>Abdominal mass</td>
<td>16</td>
<td>61.53%</td>
</tr>
<tr>
<td>Heart burn</td>
<td>12</td>
<td>46.15%</td>
</tr>
<tr>
<td>Anorexia</td>
<td>21</td>
<td>80.76%</td>
</tr>
<tr>
<td>Weight loss</td>
<td>19</td>
<td>73.07%</td>
</tr>
<tr>
<td>Weakness</td>
<td>19</td>
<td>73.07%</td>
</tr>
<tr>
<td>Ascites &amp; jaundice</td>
<td>02</td>
<td>7.69%</td>
</tr>
</tbody>
</table>

Discussion

Out of 600 dyspeptic patients, 318 (53%) are diagnosed as functional and 282 (47%) as organic dyspepsia. Among organic dyspeptic patients 256 (42.7%) are without malignancy and 26 (4.3%) are with malignancy. Julkunan (1995) reported almost same incidence of functional and organic dyspepsia with or without malignancy, but this study is dissimilar to Peterson (1995) who reported in his series, functional dyspepsia in 71% and organic dyspepsia in 29%. Kang (1994) observed functional dyspepsia in 50.4% and organic dyspepsia in 49.6% in his study.

Maximum incidence of GIT malignancy is in the 6th decade (46.1%) followed by 5th decade (26.9%) in the present series of study. Khodaskar et al (1982) from central India, Prabhakar (1981) from Amritsar, Subharwal et al (1975) from Ludhiana and Paymaster (1968) from Mumbai have also observed in their study that more than 60% of stomach carcinoma occurs in 5th and 6th decade. Neuget (1996) and Nagraj Rao D et al (2002) have also analysed in their study that maximum incidence of gastric malignancy is in the 6th decade of life.

After analysing socio-economic status, it is observed that lower socio-economic group (42.3%) are most commonly affected followed by lower middle class (30.7%). Prabhakar et al (1981) from Amritsar reported in their study that the incidence of upper GIT malignancy is higher in lower socio-economic group (46%), which is supported by others like 43.4% by Koteshwar Rao et al (1984) from Karnataka, 41.7% by...
Khodaskar et al (1982) from central India and 45.8% by Neuget et al (1996) from USA. After analysing duration of symptoms, it is observed that the most common duration of symptoms is between 6-8 months (57.6%), followed by 9-11 month (26.9%). This study is similar to Sharma (1974) and Costello et al (1977) who said that majority of the patients suffering from gastric malignancy presented within 6-8 months. But Phospha Krishna (1969) in his study found that all gastric malignancy patients presented within 2-4 months of symptoms.

In the present study adenocarcinoma of stomach is found to be the most common malignancy followed by squamous cell carcinoma of oesophagus. Remine (1969) reported that 95% of gastric malignancy was adenocarcinoma. Illingworth (1967) and Meyer (1995) have also reported in their study that majority of cases, the carcinoma is adenocarcinoma in nature. It is observed that gastric malignancy is predominantly found in those who take rice as main constituent of food (46.15%). Segi et al (1957) observed a high incidence of gastric malignancy (48.3%) who used rice as staple food. Nearly half of the patients (42.30%) in the present study is found to be addicted with smoking. This finding is similar to study made by Gajalaxami C.K. et al (1996) who reported that bidi and cigarette smoking are significant risk factors for stomach cancer.

Commonest presentation of gastric malignancy is abdominal pain (92.30%) followed by anorexia (80.76%), weight loss (73.07%) and weakness (73.07%).

Conclusion
The present study has pointed out important epidemiological contribution in the incidence of upper GIT malignancy in dyspeptic patients, but this study is limited to 26 cases so no final conclusion can be derived from this. It is for the future workers to find out the more detailed epidemiological and various aspects of upper GIT malignancy in this region.

There is a strong need to educate people, and make them realize the importance of the ill-effect of smoking, alcohol use and various aspects of lifestyle which are associated with upper GIT malignancy, especially to the illiterates and people of low socio-economic group.

References