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Surgery

Clinical Presentation of Carcinoma of Stomach and Its Relationship to the Treatment Outcomes

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Abstract		Original Research Article

Background: Carcinoma of the stomach remains a significant cause of cancer-related mortality worldwide, often presenting with non-specific symptoms such as epigastric pain, weight loss, nausea, and anemia. The clinical presentation frequently correlates with the disease stage at diagnosis, influencing treatment outcomes. This study aimed to evaluate the clinical presentation of gastric carcinoma and its relationship to treatment outcomes. **Methods:** This was a prospective observational study that was conducted in the Department of Surgery, Shaheed Ziaur Rahman Medical College Hospital, Bogura, Bangladesh from January 2007 to January 2009. A total of 50 patients with carcinoma of the stomach were selected irrespective of age and gender purposively. Data were analyzed using MS Office tools. **Results:** Significant clinical features included anemia (80%), epigastric tenderness (70%), and palpable lumps (60%). Gastroduodenoscopy detected 74% antral lesions with 95.6% sensitivity. Patients with vague abdominal symptoms presented at advanced stages, while general symptoms correlated with early stages. Curative resections achieved recurrence-free survival in 52% at 24 months. Palliative procedures were common (50%), and non-compliance (16%) negatively impacted outcomes. Adjuvant chemotherapy improved survival for 80% of cases. **Conclusion:** Anemia, epigastric tenderness, and lumps are key features of stomach cancer. Advanced stages show vague symptoms; early stages show general symptoms. Gastroduodenoscopy aids diagnosis. Early detection, regular follow-ups, and routine gastroduodenoscopy improve outcomes and survival rates.
Keywords: Carcinoma, Clinical presentation, Epigastric tenderness, Gastric cancer, Stomach.

INTRODUCTION

Carcinoma of the stomach, or gastric cancer, remains one of the leading causes of cancer-related deaths worldwide, despite a global decline in its incidence over the past few decades. It accounts for significant morbidity and mortality, particularly in developing countries, where late diagnosis and limited access to advanced treatment options contribute to poor outcomes [1,2]. In Bangladesh, gastric cancer is an emerging health concern, often presenting in advanced stages due to delays in seeking medical attention and limited awareness about early symptoms [3]. Gastric cancer is a multifactorial disease, influenced by environmental, genetic, and lifestyle factors. Established risk factors include infection with Helicobacter pylori, dietary habits such as high salt intake and consumption of smoked or pickled foods, smoking, alcohol use, and genetic predisposition [4-6]. The interplay between these factors contributes to the pathogenesis of gastric cancer, starting with chronic inflammation, atrophic gastritis, and intestinal metaplasia, ultimately leading to malignant transformation [7]. The clinical presentation of gastric cancer is often nonspecific in its early stages, including symptoms such as dyspepsia, weight loss, and anorexia. As the disease progresses, more alarming symptoms like persistent epigastric pain, gastrointestinal bleeding, and obstructive symptoms may emerge, depending on the tumor's location and extent [8,9]. The variability in clinical presentation often delays diagnosis, underscoring the importance of early detection strategies [10]. Treatment outcomes in gastric cancer are closely linked to the stage at diagnosis, with early-stage cancers

having significantly better prognoses compared to advanced-stage disease [11]. Treatment modalities include surgery, chemotherapy, radiotherapy, or a combination of these, with curative resection being the cornerstone of therapy for localized disease. However, the survival rate drops considerably in advanced or metastatic stages, where palliative care becomes the primary focus [12,13]. Emerging therapeutic approaches, such as immunotherapy and targeted molecular therapies, have shown promise in improving outcomes in specific patient subsets, highlighting the need for personalized treatment strategies [14]. In Bangladesh, the limited availability of diagnostic tools and specialized treatment facilities poses significant challenges to the effective management of gastric cancer. Socioeconomic barriers further exacerbate delays in diagnosis and treatment initiation, leading to suboptimal outcomes. Understanding the clinical presentation and its relationship to treatment outcomes is critical for developing targeted interventions and improving survival rates in this population [15]. This study aimed to explore the clinical presentation of gastric cancer among patients attending a tertiary care hospital in Bangladesh and analyze its relationship with treatment outcomes. By identifying patterns in presentation and outcomes, the study seeks to inform strategies for earlier diagnosis and more effective management of this life-threatening condition.

METHODOLOGY

This prospective observational study was conducted in the Department of Surgery at Shaheed Ziaur Rahman Medical College Hospital, Bogura, Bangladesh, from January 2007 to January 2009. A total of 50 patients diagnosed with carcinoma of the stomach were included, regardless of age or gender. Participants were selected using a purposive sampling technique. Data collection involved direct interviews with available patients and discussions with the treating surgeons whenever feasible. Data for the study were also obtained from patient files and follow-up notes at the aforementioned hospital. The study received approval from the hospital's ethical committee. Patients admitted in terminal stages who died shortly after admission, before undergoing reasonable diagnostic workup, were excluded based on the study's exclusion criteria. The collected data were analyzed using MS Office tools.

RESULT

The study highlighted the overall presentation patterns of gastric carcinoma and its association with treatment outcomes. The incidence was highest among individuals aged 51-60 years, with a higher prevalence in males than females. Most patients were smokers, belonged to lower socioeconomic groups, and resided in rural areas. Common clinical presentations included vague abdominal symptoms (31.7%), general symptoms (44.7%), epigastric lumps (12%), and complications (15%). Key physical findings included anemia (80%), epigastric tenderness (70%), and a palpable lump in 60% of cases. Routine investigations revealed anemia in 80% of patients, an elevated erythrocyte sedimentation rate (ESR) above 30 mm in the first hour in 76%, and positive occult blood test results in 40%. Patients presenting with vague abdominal symptoms were observed to have advanced-stage disease, whereas those with general symptoms were more likely to be in the early stages. On barium meal X-ray, 68% of lesions were located in the antrum, with a sensitivity of 86% and a specificity of 50% for detecting gastric carcinoma. Gastroduodenoscopy, performed in all cases, identified 74% of lesions in the antrum, demonstrating a sensitivity of 95.6%. In this study, curative resections, including lower radical gastrectomy and total radical gastrectomy, were performed in 22% (n=11) of cases. Lower partial gastrectomy was conducted in 28% (n=14) of cases, while palliative gastro-jejunostomy was performed in 50% (n=25) of cases. Intraoperative staging revealed that none of the patients were in stage I, 14% were in stage II, 56% were in stage III, and 30% were in stage IV. Postoperatively, 4% (n=2) of patients succumbed to complications. Adjuvant chemotherapy was administered to 80% (n=40) of patients, all of whom were living normal lives at six months post-treatment. By 12 months, 28% (n=14) experienced disease recurrence. At 18 months, 16% (n=8) had died, and by 24 months, the mortality rate rose to 12% (n=6). Overall, 52% (n=26) of patients had no recurrence and continued to lead normal lives with minimal complications. However, 16% (n=8) of patients did not receive chemotherapy and failed to attend regular follow-ups.

Table 1: Demographic data

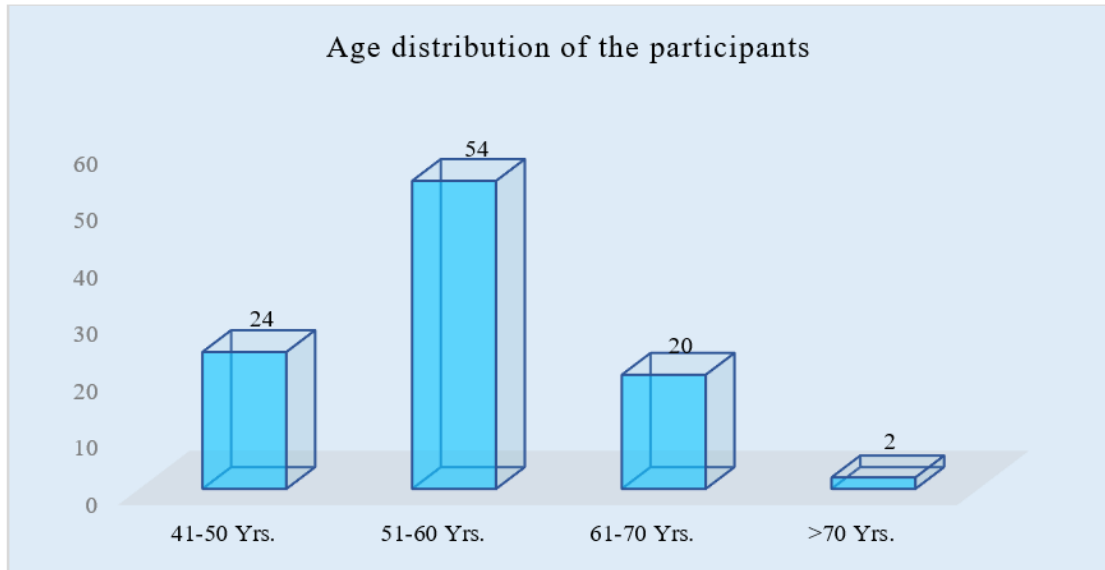| Age (Year)	n	%
41-50 Yrs.	12	24%
51-60 Yrs.	27	54%
61-70 Yrs.	10	20%
>70 Yrs.	1	2%

Figure I: Column chart showed age wise patients distribution (N=50)

Table 2: Distribution of patients according to clinical presentation (N=50)

Clinical Group	n	%	Group %
i) Vague Symptoms			
Epigastric pain not responding to treatment	38	76%	31.70%
Epigastric fullness	40	80%	
ii) General Symptoms			
Loss of weight	39	78%	44.71%
Anorexia	39	78%	
Fatigue and tiredness	32	64%	
iii) Present with Lump	30	60%	12.00%
iv) Present with Vomiting	30	60%	15.04%
Hematemesis & Melena	6	12%	
Jaundice	1	2%	
v) Dysphagia	2	4%	0.80%

Table 3: Distribution of patients according to presentation and per-operative clinical findings (N=50)

Clinical Groups and Symptoms	% Symptoms in Group (%)	Operative Findings
i) Vague Symptoms	31.70%	-Body of stomach (8%)
Epigastric pain not responding to treatment		-Antrum (17%)
Epigastric fullness		-Body and Antrum (2%)
ii) General Symptoms	44.71%	Body of stomach (6%)
Loss of weight		Antrum (28%)
Anorexia		Body and Antrum (2%)
Fatigue and tiredness		
iii) Present with Lump	12.00%	- Antrum (14%)
		- Body (2%)
iv) Present with -Vomiting	15.04%	Antrum (26%)
Hematemesis & Melena		- Body (2%)
Jaundice		Body and Antrum (2%)
v) Dysphagia	0.8	Cardia (4%)

Table 4: Distribution of patients according to clinical presentation and per-operative staging (N=50)

Clinical Presentation	% of Patients in Group	Operative Stages (TNM)
i) Vague Symptoms	31.70%	$T_2N_0M_0$ (2%)
Epigastric pain not responding to treatment		$T_2N_2M_0$ (6%)
		$T_2N_2M_0 <$ (6%)
Epigastric fullness		$T_2N_0M_{0_1}$ (2%)

ii) General Symptoms	44.71%	$T_2N_0M_0$ (2%)
Loss of weight		$T_2N_2M_0$ (6%)
Anorexia		$T_2N_2M_0 <$ (6%)
Fatigue and tiredness		$T_2N_0M_{01}$ (2%)
		$T_2N_0M_1$ (10%)
iii) Present with Lump	12.00%	$T_2N_0M_0$ (2%)
		$T_2N_2M_0$ (6%)
iv) Present with Complications:	15.04%	$T_2N_0M_0$ (2%)
Vomiting		$T_2N_2M_0$ (6%)
Haematemesis & Melaena		$T_2N_2M_0 <$(6%)
Jaundice		$T_2N_0M_{01}$ (2%)
		$T_2N_0M_1$ (10%)
v) Dysphagia	0.40%	$T_2N_0M_0$ (2%)

Table 5: Distribution of patients according to routine; investigations (N=50)

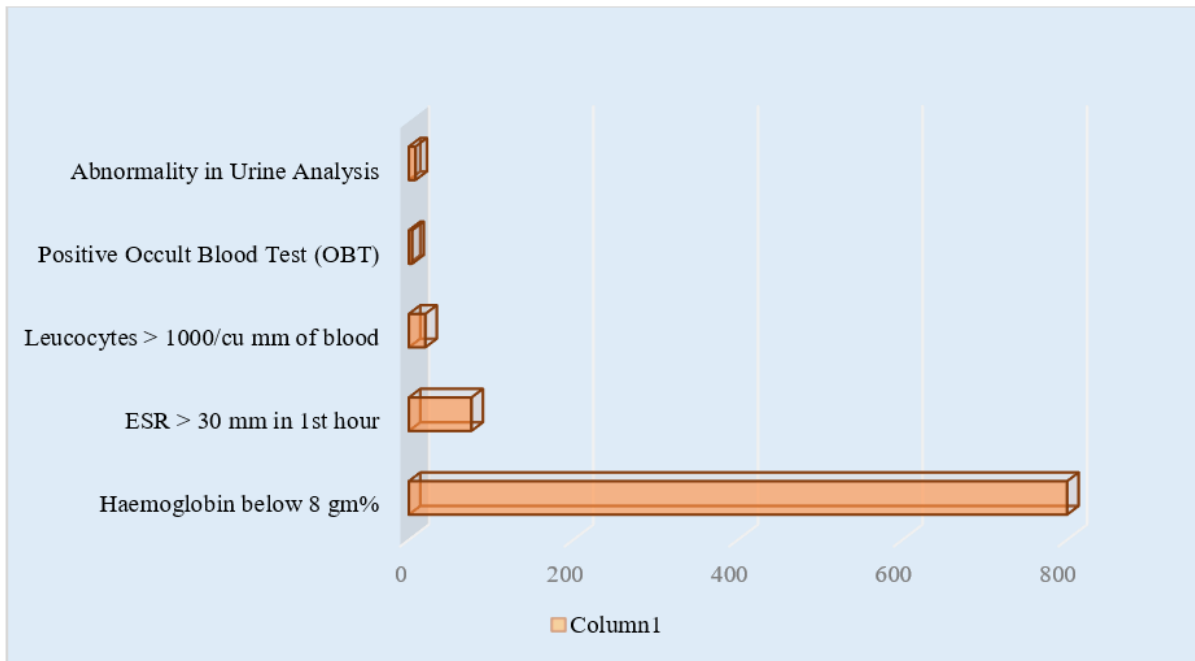| Investigation	n	%
Haemoglobin below 8 gm%	40	80%
ESR > 30 mm in 1st hour	38	76%
Leucocytes > 1000/cu mm of blood	10	20%
Positive Occult Blood Test (OBT)	20	4%
Abnormality in Urine Analysis	4	8%

Figure II: Bar chart showed patients distribution according to routine; investigations (N=50)

Table 6: Comparison between barium meal of UGIT, endoscopy, and intraoperative findings (N=50)

Site of Growth	Barium meal findings	Endoscopic findings	Operative findings
Antral Region	74%	68%	74%
Body of Stomach	12%	4%	22%
Cardia	4%	4%	0%
No Lesion Seen	16%	0%	22%

Table 7: Histopathology report of endoscopic biopsy specimen (n=47)

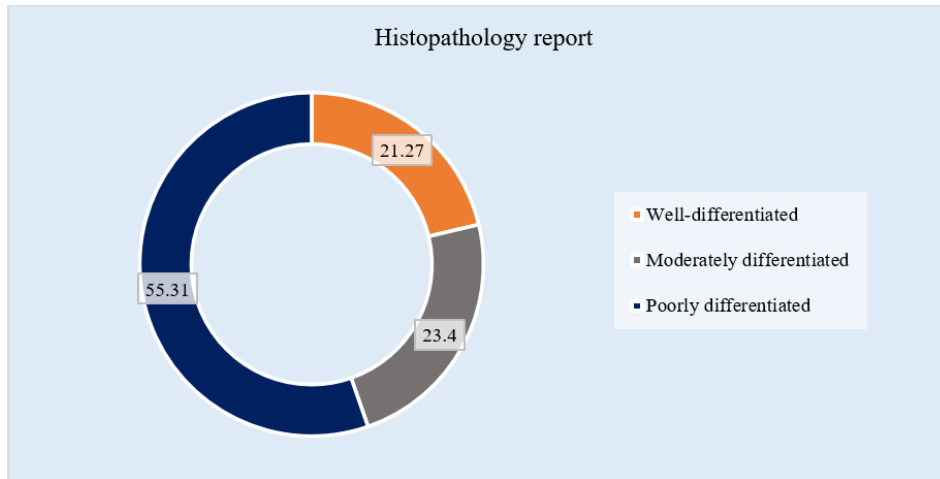| Types of carcinomas	n	%
Well-differentiated	10	21.27%
Moderately differentiated	11	23.40%
Poorly differentiated	26	55.31%

Figure III: Ring chart showed histopathology report of endoscopic biopsy specimen (N=50)

Table 8: Findings of ultrasonography of the whole abdomen (N=50)

Types of lesions	n	%
Hepatic lesion	10	20%
Enlarged lymph node	16	32%
Ascites with epigastric lump	4	8%
Normal findings	20	40%

Table 9: Ultrasonographic detection of lymph node (N=50)

Ultrasonogram	Lymph Node	
	Positive	Negative
Positive (16)	12	4
Negative (34)	30	4

Table 10: Secondaries in lymph nodes (N=50)

Enlarged group of lymph nodes	n	%
Peri gastric	46	92%
Coeliac and Para-aortic	12	24%
Mesenteric	3	6%
Supraclavicular	1	2%

Table 11: Per operative staging (N=50)

Stage	I	II	III	IV
Per-operative	0%	14%	56%	30%

Table 12: Types of surgery

Name of operation	n	%
1. Total radical gastrectomy	2	4
2. Lower radical gastrectomy	9	18
3. Lower partial gastrectomy (Palliative)	14	28
4. Palliative gastrojejunostomy	25	50

Table 13: Post-operative complications and its outcome (N=50)

Complications	n	%	Outcome
Bronchopneumonia	2	4%	Recovered
Atelectasis	1	2%	Recovered
Minor wound infections	6	12%	Recovered
Wound dehiscence	1	2%	Recovered
Bilious vomiting	3	4%	Recovered
Anastomotic failure	1	2%	Died
Gross electrolyte imbalance	3	6%	2 died 1 recovered.

Table 14: Follow-up findings (N=50)

%	Weeks/Months	Therapy	Response	Death (%)
80% (N=40)	3 Months	Oncotherapy	-	-
80% (N=40)	6 Months	Oncotherapy	-	-
28% (N=14)	12 Months	Oncotherapy	Relapse	
16% (N=8)	18 Months	Oncotherapy	Relapse	Death
12% (N=6)	24 Months	Oncotherapy	Relapse	Death
52% (N=26)	24 Months	Oncotherapy		

DISCUSSION

In this study, the presentation patterns of gastric carcinoma were examined, with the highest incidence observed in individuals aged 51–60 years, particularly in males. Similar findings were reported in a study where gastric cancer was most prevalent among individuals aged 50–60 years, with a stronger male predominance [16]. Smoking and lower socioeconomic status were common among the patients, mirroring trends seen in previous studies, which have consistently highlighted these factors as significant risk contributors for gastric cancer [17]. The clinical presentation in our study was varied, with vague abdominal symptoms being most common (31.7%), followed by general symptoms (44.7%). Similar findings were reported in another study, which noted vague abdominal discomfort and weight loss as frequent early indicators of gastric carcinoma. However, the proportion of patients presenting with epigastric lumps (12%) in our study was relatively higher than in other studies, where such presentations were less common. For example, a study found that only 5% of patients presented with palpable abdominal lumps at the time of diagnosis [18]. Our study also highlighted anemia as a common physical finding (80%) in gastric carcinoma patients, consistent with findings in other studies, where anemia was noted in 75% of gastric cancer cases [19]. Epigastric tenderness and a palpable lump were observed in 70% and 60% of patients, respectively, which aligns with the findings from a similar cohort, where these signs were also significant in advanced gastric cancer cases [20]. Routine investigations in our study showed a high incidence of anemia (80%), elevated ESR (76%), and positive occult blood tests (40%). These findings were in line with previous studies, which have shown that elevated ESR and positive occult blood tests are often associated with gastric cancer [21]. When comparing diagnostic methods, our study found that 68% of lesions were detected in the antrum on barium meal X-ray, with a sensitivity of 86% and specificity of 50%. This was consistent with a similar study that reported a sensitivity of 80% and specificity of 60% for barium meal in detecting gastric carcinoma. However, the sensitivity of gastroduodenoscopy in our study (95.6%) was much higher, which is consistent with findings from another study, where gastroduodenoscopy demonstrated superior diagnostic accuracy for gastric carcinoma [22]. Regarding treatment outcomes, curative resections were performed in 22% of cases, while palliative surgeries, such as gastro-jejunostomy, were performed in 50%. A study found a similar distribution, with 20% undergoing curative surgery and 45% receiving palliative care. However, in our study, none of the patients were in stage I at the time of surgery, and most were in stages III and IV. This contrasts with findings in other studies, where early-stage gastric carcinoma was more prevalent in their cohorts, possibly due to differences in screening practices and early diagnosis [23]. In terms of postoperative outcomes, 4% of patients in our study succumbed to complications, which is relatively lower compared to the postoperative mortality reported in another study. The mortality rate increased at 12 months (16%), and 28% of patients experienced disease recurrence by 12 months, which is consistent with the recurrence rate observed in other studies, where up to 30% of patients with gastric carcinoma relapse within the first year after surgery [24].

CONCLUSION & RECOMMENDATION

The findings highlight anemia, epigastric tenderness, and palpable lumps as critical clinical features in carcinoma of the stomach, with advanced stages linked to vague symptoms and early stages to general symptoms. Gastroduodenoscopy proves highly sensitive in detecting antral lesions. Curative resections and adjuvant chemotherapy significantly improve survival, while non-compliance hinders outcomes. Prioritizing early detection and regular follow-up is crucial. Routine gastroduodenoscopy is recommended for timely diagnosis and effective management of stomach cancer.

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