Review Article

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# How to report pathological indicators of gastric malignancies in a hospital in Iran, a developing country

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ABSTRACT

**Objective:** The aim this study was How to report pathological indicators of gastric malignancies in a hospital in Iran, a developing country.
**Method:** This cross-sectional study was conducted on 174 patients. Study variables including age and sex, type of biopsy, extent of gastric tissue involvement, exact anatomical location, tumor size, histological grading, invasion of surrounding tissues and lymph node metastasis were extracted from patients' records. Data were analyzed using SPSS 22 software. Frequency and percentage were reported using descriptive statistics. Graphs were drawn using Excel 2010.
**Results:** 174 patients were studied in this study; that 63.8% of the patients were female (n= 111). The prevalent of reports were related to the histology of adenocarcinoma (n = 136, p = 78.20), tumor size (n = 89, p = 51.15), anatomical exact location (n = 90, p = 51.70), respectively. Among the 90 patients for whom the exact anatomical location was reported, the most reports were related to the antrum (n = 38, p = 42.23). The highest prevalence of histological type of adenocarcinoma was related to Poorly differentiated (n = 57, p = 41.94).
**Conclusion:** The findings of this study showed that the way of reporting pathological indicators in gastric malignancies in the studied cases was somewhat appropriate.

**Keywords: pathological indicators, gastric malignancies, Iran**

## INTRODUCTION:

The stomach is the most common site of involvement in the gastrointestinal tract (1). Gastric cancer (GC) is a cancer that develops in the lining of the stomach. The most common type of GC is gastric carcinoma, one of which is gastric adenocarcinomas (2-4). About 90% of stomach cancers are adenocarcinomas (5).

GC is a multifactorial disease (6). Risk factors for GC include Helicobacter pylori and Epstein–Barr virus (EBV) infections, family history, alcohol consumption, smoking, diet, history of an adenomatous gastric polyp larger than 2 centimetres, alcohol and ow socioeconomic status (7, 8).

The epidemiology of GC varies in different geographical areas. Its incidence varies between 5-10 times. (9). GC is the fourth most common cancer and the second leading cause of cancer death in the worldwide (10). In 2017, more than 1.22 million cases of GC occurred in the world. And about 865,000 patients died from the disease. The highest incidence of GC in 2017 was in China. Which has almost half of the cases (11). The average 5-year survival rate of GC is 20% (12).

In the recent years, there has been a great deal of emphasis on the use of pathology reporting standards (13). The first serious actions in this field were taken by specialized oncology centers, in the form of cancer screening programs. For example in the United Kingdom, the Royal College of Pathologists has set specific standards for this purpose (14). The pathology report provides information that helps to stage the patient's tumor. The pathology report is very helpful in determining the status, stage of tumor, patient's prognosis and the need for further treatment. Because the prognosis is poor in gastrointestinal cancers such as gastric and esophageal cancers (15). The number and location of lymph nodes, the involvement of the tumor margin, and the rate of response to neoadjuvant treatments and tumor classification based on the TNM system are important. In addition, histopathology reports have been effective in conducting research (especially on the effectiveness of neoadjuvant therapies) (13). Iran is one of the developing countries located in the Middle East (16). GC is the most common cancer in Iran in men and women. The age-standardized incidence rates of GC is 110 per 100,000 for male and 98 per 100,000 for female (17). Recently, environmental risk factors for GC in Iran have included Helicobacter pylori infection, gastroesophageal reflux disease, smoking and intake of salt (18).

Therefore, it is important to pay attention to the observance of standards in pathology reporting. The aim of this study was to investigate the report of pathological indicators in gastric malignancies in samples sent to the pathology department of Shahid Sadoughi Hospital in Yazd, Iran in 2016-2018.

## Methods:

### 1. Study Design and Participants

In this cross-sectional study, all patients of gastric adenocarcinoma who underwent gastric biopsy for any reason in 2016-2018 and were admitted to Shahid Sadoughi Hospital in Yazd, Iran were included in the study. Exclusion criteria were incomplete patient record. Data were collected with a checklist from the pathology records of patients. The sampling method was census. Macroscopic and microscopic findings among the samples were examined. Study variables including age and sex, type of biopsy, extent of gastric tissue involvement, exact anatomical location, tumor size, histological grading, invasion of surrounding tissues and lymph node metastasis were extracted from patients' records.

Standard indicators in reporting malignant gastric pathology include:

1. Type of sampling
2. Type of adenocarcinoma
3. The exact location of the tumor
4. Tumor size
5. Tumor grade
6. Place and extent of invasion in case of invasion
7. Sample margin conflict
8. Presence or absence of vascular-lymphatic invasion
9. The presence or absence of invasion around the nerve
10. Presence or absence of invasion of regional lymph nodes

11. Classification of tumors
12. Other pathology findings

2. Statistics analysis

Data were analyzed using SPSS 22 software. Frequency (F) and percentage (P) were reported using descriptive statistics. Graphs were drawn using Excel 2010.

**Results**:

174 patients were studied in this study; that 63.8% of the patients were female (F = 111). 1.7% (F =3) of the cases in our study were gastrectomy.

The prevalent of reports were related to the histology of adenocarcinoma (F = 136, P = 78.20), tumor size (F = 89, P = 51.15), anatomical exact location (F = 90, P = 51.70), respectively (Figure 1).

Among the 90 patients for whom the exact anatomical location was reported, the most reports were related to the antrum (F = 38, P = 42.23), cardia (F = 27, P = 30), and wind (F = 12, P = 13.34) respectively (Figure 2).

The histological type of adenocarcinoma was reported in 136 cases. The highest prevalence was related to Poorly differentiated (n = 57, P = 41.94), Poorlydifferentiated with signet ring features (F = 31, P = 22.79) and (F = 19, P = 13.97) respectively (Figure 3).

**Discussion:**

1.7% of the cases in our study were gastrectomy. The study of Nowruz Nia et al. in 2013 was performed on 452 patients with GC in Urmia province, 12% underwent gastrectomy .

In our study, tumor size and histological type of adenocarcinoma were reported in 51.15% and 78.2%, respectively. In one study, 56 pathology reports were reviewed, of which 80.4% did not determine the type of tumor subtype. In this study, 16.1% did not report tumor stage, 8.9% invasion depth, 26.8% lymph node involvement, and 10.7% tumor size (19).

In the study by Bull et al. in the UK, gastric adenocarcinoma was reported in the pathology of 77% of patients (20).

In our study, the exact anatomical location of the tumor was reported in 51.7% of patients. According to the re-

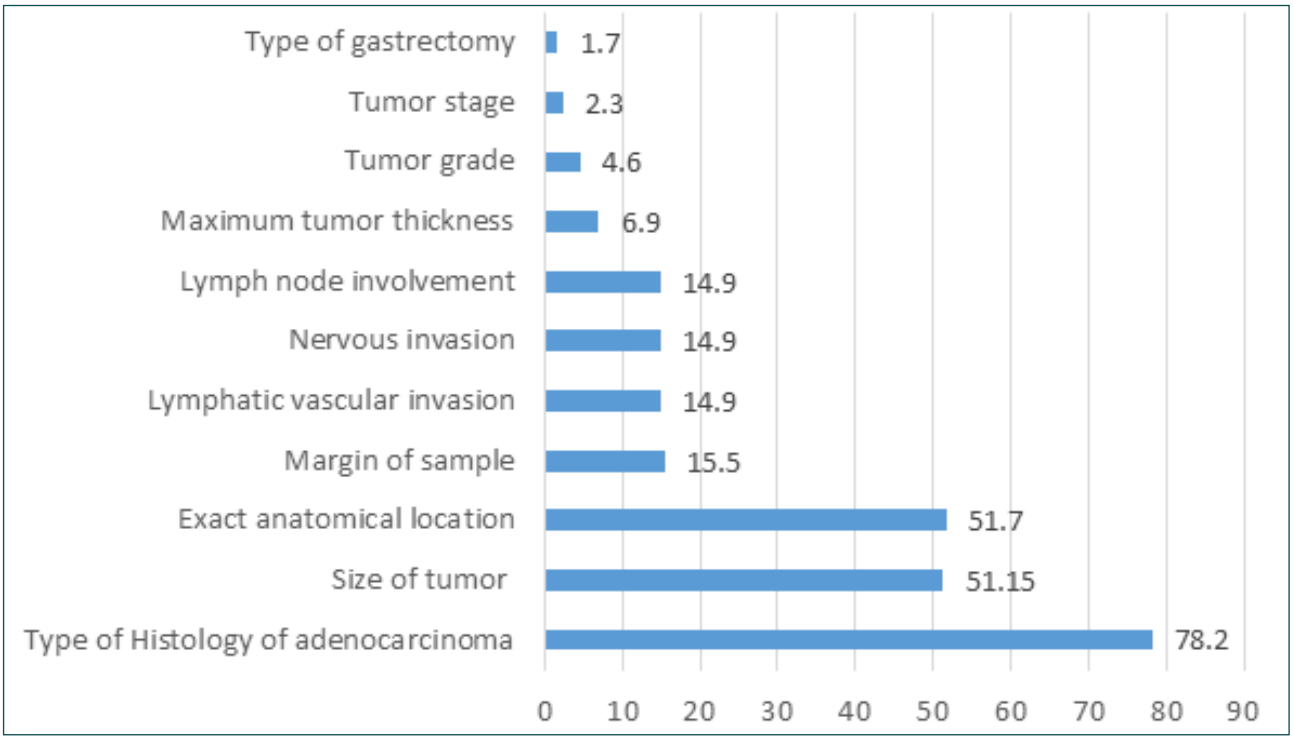


**Figure 1.** Prevalence of reporting variables studied in this study

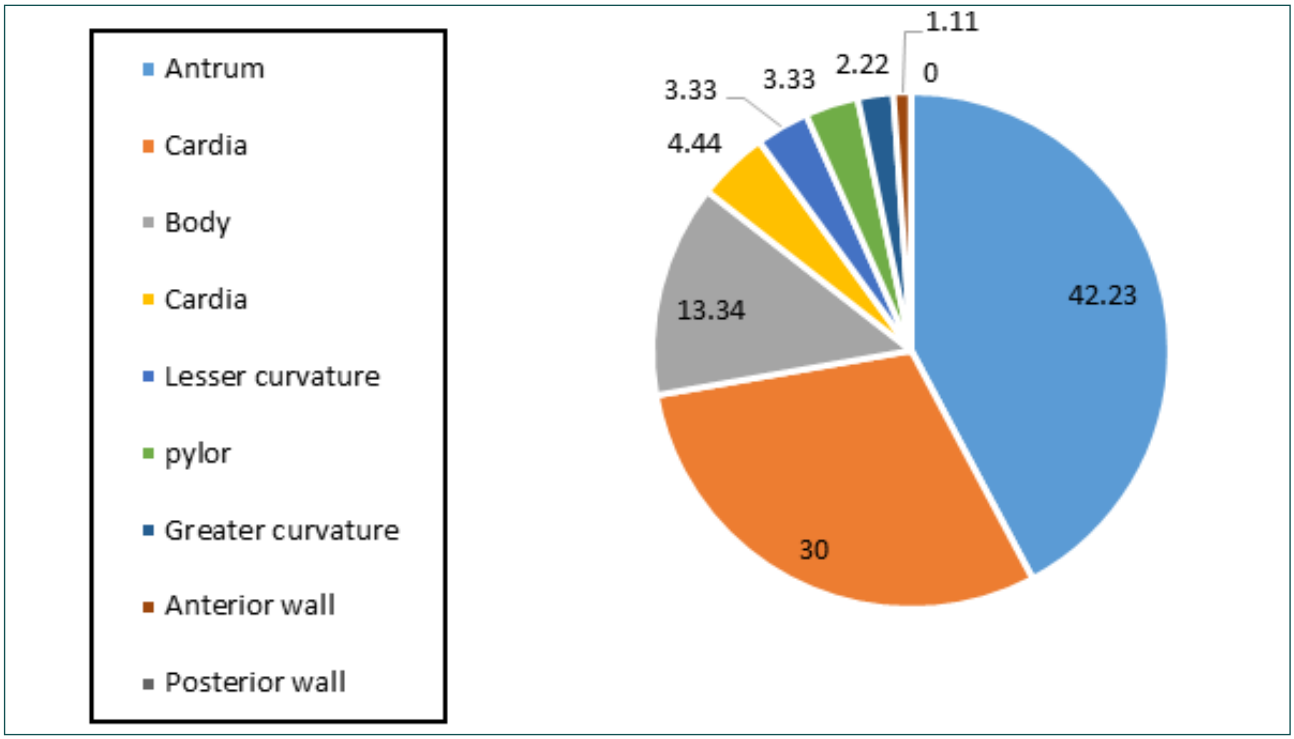


**Figure 2.** Percentage of anatomical exact location reports

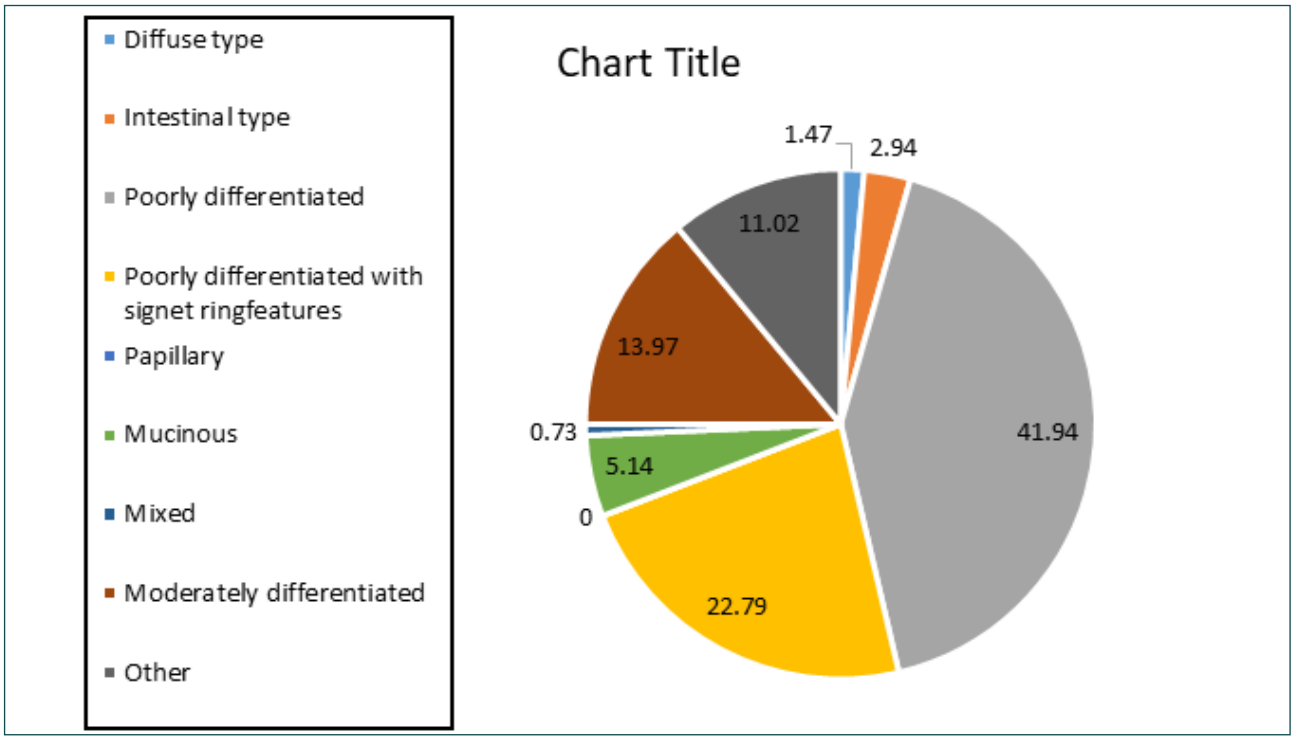


**Figure 3.** Percentage of frequency of adenocarcinoma histology type report

sults of our study, the exact anatomical location of the tumor was 42.23% in the antrum, 30% in the cardia and 13.34% in the body respectively. The results of the Iranian study of Hashemi et al. in Rasoul Akram, Firoozgar and Haft Tir hospitals, which was performed on 350 people; The results showed that adenocarcinoma was more common in the proximal part and lymphoma in the middle part of the stomach (21).

In another study conducted in Iran in Urmia province, the most common site of adenocarcinoma was reported in small curvature and cardia. The results of these studies were inconsistent with our study, as the most common anatomical position in this study was the antrum (22).

In our study in 84.5%, the sample margin was not reported. As a result, in most cases, the sample margin was not reported. In a study conducted in Yazd, 57.1% of the samples did not report tumor margins (19).

The results of our study showed that in 6.9% of cases, the maximum thickness of the tumor was reported, the highest thickness in these findings was 2.5 mm and the minimum thickness was 0.5 mm. Due to the fact that in most cases the maximum tumor thickness was not reported in our study, the results could not be reliable. Also, tumor size was reported in 51.15% of cases and the maximum size was 23 mm and the minimum size was 0.3 mm.

In our study, lymph novascular invasion and perineural invasion were reported in 14.9%. In 85.1% of cases, this report was not mentioned. In 2.3% of cases, tumor stage was reported and in 4.6% of cases, tumor grade was reported, and as a result, in most cases, tumor stage and grade were not mentioned. In reviewing similar studies, no useful information was found to examine the consistency and inconsistency with our study, and these results could be useful for future studies.

## Strengths and limitation:

The strength of our study is that in Iran, issues similar to this study, which evaluated the indicators of pathological reporting, are less studied. While these studies can have more complete patient record forms in the treatment process. The limitations of this study is the time and number of reports.

## Conclusion:

According to the results of our study, it can be concluded that the reports of GC pathology samples need to improve the content according to existing standards.

The use of pathology reporting standards can have a significant impact on the patient's treatment and recovery process. Therefore, deficiencies in reporting forms can be significantly improved by using a systematic approach such as the same correct templates.

## Declarations :

1. Ethics approval

This study has been approved with the code of ethics ir.ssu.medicine.rec.1398.360 in Shahid Sadoughi University of Medical Sciences.

2. Consent for publication: Not applicable

3. Conflict of interest: There are no conflicts of interest.

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7. Abbreviations

GC : Gastric cancer

EBV : Epstein–Barr virus

F : Frequency

P : Percentage

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