

THE HISTOPATHOLOGIC AND GEOGRAPHIC PATTERN OF STOMACH CANCER IN IRAQ (2000-2007)

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Abstract

Retrospectively we studied case sheets of gastric cancer patients in Iraq during our work in the cancer council in MOH; about 3412 newly diagnosed cases were reported during eight years (2000-2007). These data were brought from all Iraqi governorates and general and private hospitals, and by reviewing the histopathology of all patients and geographically, we concentrated on the year 2007 because the data available more regarding results of histopathology. As in other countries, we found that adenocarcinoma is the most common 58.6%, while the highest incidence is reported in Duhok, Najaf, and Kirkuk.

Keywords: Stomach Cancer, Iraq

Introduction:

Gastric cancer can arise at any stomach site. It may locally invade nearby structures, particularly the esophagus, lymph nodes, and liver, or disseminate through different hematogenous, lymphatic, and transcoelomic. During eight years period (2000-2007), a total of 3412 cases of newly diagnosed stomach cancer were reported. The most common histological type is adenocarcinoma which arises from mucosal epithelial glands and composes about 90% histologically. According to Lauren's classification, which was started in 1965 but is still dependable, Two types of adenocarcinomas, intestinal and diffuse; in the first one, the intestinal metaplasia is a feature in most cases that is why called intestinal in addition to its microscopic features resemble those of intestinal cancer, the metaplasia may occur after chronic atrophic gastritis that may be caused by infection with helicobacter pylori or caused by other factors while in diffuse-type which is more malignant, the intestinal metaplasia is very rare, both types can be, well, moderate, or poorly differentiated. In these types of tumors, the cells are characterized by discohesion and mucinous secretion that may form colloid spaces in the interstitial tissue, or if mucus stays in the cell, it pushes the nucleus to the periphery forming a signet ring appearance microscopically. Lymphomas (whether diffuse or localized type) compose about 5% of all gastric tumors. Carcinoids may also arise but are significantly less common than lymphomas. Stromal tumors also occur rarely [1].

Stomach cancer accounted for 7.8% of cancers globally and ranked fourth. [2]. The aim of this study was to determine the histopathologic and geographic pattern of stomach cancer in Iraq.

Methods

Reviewing the histopathological reports present in the ministry of health in Iraq (cancer council office) collected from different provinces of Iraq, general hospital statistical office from both general and private hospitals in each governorate including the eight-year period (2000-2007). The reports were analyzed for each governorate to figure the geographic distribution according to the incidence of gastric cancer and the histopathology pattern and compared with the results of different countries. Also, gastric cancer was compared with all other cancers in Iraq.

Results

The patients were; 1979(57.8%) males and 1433(42.3%) females. Gastric malignancy composed about 3.3% of all registered cancers in Iraq and ranked tenth among the leading cancers in Iraq.

The annual number of stomach cancer registered cases in Iraq is demonstrated in table 1.

Table 1: The annual number of registered cases of gastric cancer during the period from 2000-2007 in Iraq.

| Year | Number of registered cases |
|-------------|-----------------------------------|
| 2000 | 377 |
| 2001 | 511 |
| 2002 | 442 |
| 2003 | 342 |
| 2004 | 268 |
| 2005 | 548 |
| 2006 | 490 |
| 2007 | 434 |

Histopathology

Adenocarcinoma was the most common histology accounting for 58.5% of all stomach cancers. Table 2 shows the number and percentage of various histopathologies of the stomach cancer.

Table 2: The number and percentage of various histopathologies of the stomach cancer

| Histopathology | CASES | |
|---|--------------|----------|
| | No. | % |
| Adenocarcinoma | 2001 | (58.6%) |
| Neoplasm, NOS (not otherwise specified) | 205 | (6%) |
| Epithelial | 110 | (3.2%) |
| Signet ring cell carcinoma | 60 | (1.8%) |
| Squamous cell carcinoma | 34 | |
| Mucinous adenocarcinoma | 19 | |
| Leiomyosarcoma | 13 | |
| No histology | 970 | (28.5%) |
| Total | 3412 | |

The Geographic distribution:

It was possible to study the geographic pattern of cancer in Iraq during the year 2007 only since the data of histopathology more available at 2007 Duhok: In stomach cancer ranked eighth of all registered cancers. There were 25 registered cases of stomach cancer, accounting for 5.25% of all cancer cases. In Duhok, there were 94.16 registered cases of cancer per 105 population and 4.95 registered cases of stomach cancer per 105 population. The estimated population in Duhok during the year 2007 was 505491.

Al- Najaf: In Al- Najaf, stomach cancer ranked the ninth of all registered cancers. There were 38 registered cases of bladder cancer, accounting for 3.4 % of all cancer cases. In Al Najaf, 103.31 registered cases of cancer per 105 population and 3.51 registered cases of stomach cancer per 105 population. The estimated population in Al Najaf during the year 2007 was 1081203.

Kirkuk: In Kirkuk, stomach cancer ranked sixth of all registered cancers. There were 27 registered cases of stomach cancer, accounting for 4.52 % of all cancer cases. In Kirkuk, there were 66.29 registered cases of cancer per 105 population and 2.99 registered cases of stomach cancer per 105 population. The estimated population in Kirkuk during the year 2007 was 902019.

Al –Basrah: In Al –Basrah, stomach cancer ranked 7th of all registered cancers. There were 47 registered cases of stomach cancer, accounting for 4 % of all cancer cases. In Al –Basrah, 61.01 registered cases of cancer per 105 population and 2.46 registered cases of stomach cancer. Per 105 population. The estimated population in Al –Basrah during the year 2007 was 1912533.

In the ten provinces of Sulaimaniyah, Al-Muthana, Thi-Qar, Diwaniya, Karbala, Dyala, Salah-Alden, Nineveh, and Wasit, stomach cancer was not among the top ten cancers, with cases registered was less

than 22 cases of stomach cancer reported during the year 2007 in these provinces. In these provinces, registered cases of stomach cancer per 105 population ranged between 0.54 to 1.13.

Table 3: the geographic distribution of stomach cancer during 2007

| Province | All Cancer cases | stomach cancer cases (%) of total | Cancer cases /10 ⁵ population | Ca stomach cases / cases /10 ⁵ population | Estimated population |
|------------|------------------|-----------------------------------|--|--|----------------------|
| Duhok | 476 | 25(5.25%) | 94.16 | 4.95 | 505491 |
| Al- Najaf | 1117 | 38(3.4%) | 103.31 | 3.51 | 1081203 |
| Kirkuk | 598 | 27(4.52%) | 66.29 | 2.99 | 902019 |
| Al –Basrah | 1167 | 47(4%) | 61.01 | 2.46 | 1912533 |
| Missan | 315 | 15(4.76%) | 38.22 | 1.82 | 824147 |
| Baghdad | 3607 | 123(3.41%) | 50.4 | 1.72 | 7145470 |
| Erbil | 616 | 24(3.90%) | 39.93 | 1.56 | 1542421 |
| Babil | 922 | 26(2.82%) | 55.82 | 1.57 | 1651565 |
| Al Anbar | 293 | 11(3.75%) | 19.71 | 0.74 | 1485985 |

Discussion

Both morbidity and mortality of gastric malignancy decreased during the last 70 years in different world areas, yet it is the second most common in the world [3,4,5]. Stomach cancer accounted for 3.3% of all registered cancers in Iraq and ranked tenth among the leading cancers in Iraq. In this study of all 3412 cases studied, we did not find lymphomas or carcinoids, which can be explained possibly by the inclusion of these types in files with no histopathology (970) or some of them regarded as NOS (not otherwise specified).

The regional variations from the east to the west brought scientific attention [6,7]. The incidence is low in economically developed countries, the USA, for example, while very high in Japan and Korea, which are also economically well developed, but immigrants from those countries to the USA showed frank reductions in the risk. In every region of the globe, including Iraq, gastric cancer has a higher incidence in males than in females [6,7].

The incidence of gastric cancer has fallen dramatically in different countries. In Iraq, the decrease in the incidence of stomach cancer was not consistent during the period from 2000 to 2007, but the incidence decreased during the years from 2005 to 2007.

Conclusion

Adenocarcinoma was the most common histopathology accounting for 58.6% of all stomach cancers in Iraq. The highest incidence of stomach cancer was reported in three provinces of Duhok, Al Najaf, and Kirkuk.

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