

Significance of Pre-Operative Peritoneal Cytology in Staging and Treatment of Gastric Cancer

Rifat Peksöz*, Esra Dişçi and Sabri Selçuk Atamanalp

Department of General Surgery, Atatürk University Research Hospital, Erzurum, Turkey

***Corresponding Author:** Rifat Peksöz, Assistant Professor, Department of General Surgery, Atatürk University Research Hospital, Erzurum, Turkey.

Received: August 30, 2021; **Published:** September 06, 2021

While gastric cancer is the fourth most common cancer around the world, it ranks third in cancer related deaths [1,2]. Since early-stage gastric cancers do not have a specific symptoms, when the disease is diagnosed in gastric cancer patients, the patients are either in the advanced stage or metastatic [3].

The stage of the disease is the most important factor determining the morbidity and mortality of the disease. Radiologic methods (which includes pelvic and abdominal CT), Endoscopic Ultrasound (EUS), laparoscopy, peritoneal cytology for gastric cancer staging [4]. Especially peritoneal cytology is one of the most emphasized studies recently. The peritoneum is one of the most common area of advanced gastric cancer and the presence of peritoneal implant is predictor of bad prognosis [3,5]. Peritoneal spread found poorly differentiated histologic type in early gastric cancers. Peritoneal disease has more greater impact than clinical TNM staging on survival [5].

Cytological examination also provides the possibility of laparoscopy. Laparoscopy can be a good way to diagnose metastasis in upper gastrointestinal cancers before laparotomy. Metastatic lesions and peritoneal cavity can be visible with laparoscopy in in upper gastrointestinal cancers. Thus, unnecessary laparotomy can be prevent and it can be help in choosing the right treatment form [6].

Peritoneal cytology changes the treatment of the 25% of patients considered to be curative [5]. If the preoperative cytology status is known, preoperative chemotherapy can be given, or curative treatment can be performed for negative cytology. Preoperative negative peritoneal cytology increases survival rate more than positive peritoneal cytology. Positive cytology is considered stage IV cancer but isn't the same as with macroscopic peritoneal metastasis [7,8]. Curative resection isn't beneficial in the presence of peritoneal disease. Systemic chemotherapy or best supportive care is recommended for these patients according to the National Comprehensive Cancer Network guidelines [5].

Since the rate of positive cytology is low in all patients, it is not practical and cost-effective to perform in all patients [9]. There is no need for peritoneal cytology staging for early gastric cancers ((T1, T2 and N0)) detected by endoscopic ultrasound. While the rate of positive patient detection is approximately 4% in early gastric cancers ((T1, T2 and N0), it is 25% in T3/4, N+ tumors (10). Local advanced tumors (T3-T4, N+) would likely gain the most benefit before curative resection from peritoneal staging [5].

In summary, peritoneal lavage cytology with high volumes should be use for true staging in gastric cancer. Restaging laparoscopic cytology should be used in positive peritoneal cytology after chemotherapy with no peritoneal metastasis patients. Negative peritoneal cytology with no peritoneal metastasis patients can be undergo definitive surgery [11]. In locally advanced gastric cancers, cytology should be performed at the beginning of neoadjuvant chemotherapy or peri-operative [9].

Bibliography

1. Power DG., *et al.* "Endoscopic ultrasound can improve the selection for laparoscopy in patients with localized gastric cancer". *Journal of the American College of Surgeons* 208 (2009): 173-178.
2. Peksöz R and Borazan S. "Features of the upper gastrointestinal system malignancies in the Muş region". *Endoscopy Gastrointestinal* 28 (2020): 35-38.
3. Ferlay J., *et al.* "Cancer incidence and mortality worldwide: sources, methods and major patterns in Globocan 2012". *International Journal of Cancer* 136 (2015): E359-386.
4. Kang, Wen-Zhe., *et al.* "Survival outcomes and prognostic indicators for gastric cancer patients with positive peritoneal wash cytology but no peritoneal metastasis after radical gastrectomy". *World Journal of Gastrointestinal Oncology* 13.1 (2021): 24-23.
5. Ghanadi Kouros., *et al.* "Pre-operative laparoscopic staging of gastric cancer in patients who are candidates for neo-adjuvant chemotherapy: A Cross Sectional Study". *Biomolecular Concepts* 10.1 (2019): 68-72.
6. Allen Casey J., *et al.* "Staging laparoscopy and peritoneal cytology in patients with early stage gastric adenocarcinoma". *World Journal of Surgical Oncology* 18.1 (2020).
7. Chen WQ., *et al.* "Zhonghua zhong liu za zhi". *Chinese Journal of Oncology* 39.1 (2017): 60-66.
8. Jamel Sara., *et al.* "Prognostic significance of peritoneal lavage cytology in staging gastric cancer: systematic review and meta-analysis." *Gastric Cancer: Official Journal of the International Gastric Cancer Association and the Japanese Gastric Cancer As* 21.1 (2018): 10-18.
9. Fujiwara Yoshiyuki., *et al.* "Neoadjuvant intraperitoneal and systemic chemotherapy for gastric cancer patients with peritoneal dissemination". *Annals of Surgical Oncology* 18.13 (2011): 3726-3731.
10. De Andrade James P and James J Mezhir. "The critical role of peritoneal cytology in the staging of gastric cancer: an evidence-based review". *Journal of Surgical Oncology* 110.3 (2014): 291-297.
11. Harris Mark C., *et al.* "Survey and literature review on the importance of peritoneal cytology in staging and treatment of gastric cancer: always wash it before you treat it". *ANZ Journal of Surgery* 91.1-2 (2021): 13-18.

Volume 8 Issue 10 October 2021

©All rights reserved by Rifat Peksöz., et al.