Bidirectional chemotherapy in gastric cancer (GC) with peritoneal carcinomatosis (PC) combining intravenous chemotherapy with pressurized intraperitoneal aerosol chemotherapy (PIPAC): Results of 103 procedures in 52 patients

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Background: Up to 43% of GC patients show synchronous PC at time of diagnosis and peritoneal relapse develops in 10–46% of cases after radical surgery. Systemic chemotherapy shows low response rate (14-25%) and median survival of 8-10 months. Innovative therapeutic approaches are needed to improve survival.

Methods: Treatment protocol for untreated patients included initial staging laparoscopy/laparotomy, 3–4 courses of systemic chemotherapy (XELOX) followed by Pressurized IntraPeritoneal Aerosol Chemotherapy (PIPAC) with low-dose Cisplatin and Doxorubicin every 6 weeks until progression of disease or death. Criteria of progression were 50% and more PCI increase or distant metastases. Patients with primary or recurrent GC, who received earlier one or two lines of systemic chemotherapy, didn’t receive 4 XELOX courses before PIPAC. Primary endpoints were overall survival and pathologic response after peritoneal rebiopsy.

Results: 52 patients were included (15 men, 37 women, mean age 53.5 years), 38 patients had primary GC with PM and 14 had peritoneal relapse after surgery (with or without adjuvant therapy). 19 patients had systemic chemotherapy before inclusion to the program. Mean PCI was 12.6 (min-max 3–34). Altogether, 103 PIPAC procedures were performed in the 52 patients. The main reason for not undergoing more than one PIPAC was PC progression (16). Pathological response was estimated in 30 pts under went more than 1 PIPAC. 33% of patients showed complete pathologic response (CR), 50% - PR and 17% of cases had weak or no response. PCI score has decreased in 37% of patients, remained stable in 10% and has increased in 53% of cases. Thus PCI change isn’t equal to the pathologic response. Median survival was 14.6 months and one-year overall survival was 62%. The median survival was better in patients with low PCI and in those who responded to systemic chemotherapy, but the difference was not significant.

Conclusions: Bidirectional chemotherapy combining intravenous chemotherapy and PIPAC can induce objective tumor regression and is associated with a promising survival in GC with PC.

Legal entity responsible for the study: P.A. Herzen Moscow Oncology Research Institute - Branch of the National Medical Research Radiological Center, Ministry of Health of the Russian Federation, Moscow, Russian Federation

Funding: None

Disclosure: All authors have declared no conflicts of interest.