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Palliative gastrectomy in patients with stage IV gastric cancer - our recent experience

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Rezumat

Gastrectomia paliativă la pacienții cu cancer gastric în stadiul IV – experiența recentă

Introducere: Pacienții cu cancer gastric metastatic nu sunt considerați de obicei buni candidați pentru chirurgie. Progrese recente în anestezie şi buna aplicare a tehnicilor de exereză, au permis rezecții gastrice paliative, asociate uneori cu alte proceduri chirurgicale.
Material şi metodă: Am studiat locul gastrectomiilor paliative şi impactul lor asupra supraviețuirii la pacienți cu cancer gastric în stadiul IV, în perioada 2003-2008.
Rezultate: Din 295 de pacienți cu cancer gastric internați, au fost identificați 140 de pacienți cu boala în stadiul IV; 85 dintre ei nu au fost rezecați gastric (45 au primit doar chimioterapie), iar la 55 s-au practicat rezecții gastrice paliative urmate sau nu de chimioterapie adjuvantă. Supraviețuirea medie la pacienții neoperați care au beneficiat doar de chimioterapie a fost de 6,4 luni, nesemnificativ diferită de cea a pacienților cu rezecție paliativă (8, 9 luni). Grupul la care s-a practicat chirurgie paliativă şi terapie citostatică adjuvantă a avut o supraviețuire medie semnificativ mai bună (17,8 luni). Mortalitatea şi morbiditatea asociate rezecțiilor gastrice paliative a fost 9%, respectiv 34,5%.
Concluzii: Aceste date arată că rezecția gastrică paliativă asociată cu chimioterapie adjuvantă pot ameliora semnificativ supraviețuirea şi calitatea vieții la pacienții cu cancer gastric în stadiul IV.

Cuvinte cheie: Gastrectomie paliativă, cancer gastric stadiul IV

Abstract

Background: Patients with metastatic gastric cancer are usually not good operative candidates. Recent improvements in surgical techniques allowed palliative gastric resection and other surgical procedures.
Method: We have examined the place of palliative gastrectomy and its impact on survival in stage IV gastric cancer patients admitted in 2003-2008 period.
Results: From a total of 295 patients with gastric cancer, we found 140 patients with stage IV disease; 85 of them had no resection (45 received only chemotherapy) and 55 underwent palliative gastric resection with or without postoperative chemotherapy. Mean survival in non-operated patients with chemotherapy alone was 6.4 months, not significantly different to that of the patients with palliative surgery alone (8.9 months). The group with palliative surgery and adjuvant therapy had a significantly better mean survival (17.8 months). Mortality and morbidity rates associated with palliative surgery were 9% and 34.5%, respectively.
Conclusions: These data suggest that palliative surgery associated with adjuvant chemotherapy can improve survival in patients with stage IV gastric cancer.

Key words: palliative gastrectomy, stage IV gastric cancer

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Introduction

Although the incidence of gastric cancer has decreased, it remains the second common cancer in male and third in female population in Romania. Because a screening program is not available in our country, most patients with gastric cancer present at an advanced stage, therefore they are often not suitable candidates for curative surgery.

It is widely accepted that surgical resection remains the mainstay of curative treatment for gastric cancer. Although patients having metastatic gastric cancer are not usually considered as operative candidates, recent improvements in management of neighbouring organ involvement, especially liver, pancreas, and spleen involvement, allowed palliative gastric resection and other surgical procedures. The benefit of palliative resection should be to enable oral food intake, to avoid symptoms as bleeding and obstruction (1,2) and to improve pain and quality of life. Also, the response to adjuvant therapy is better after tumour resection (3,4). This study aims to assess patient outcome after palliative gastric resection for stage IV gastric cancer.

Materials and Method

Between 2003 and 2008, 295 patients with histological proven gastric adenocarcinoma were admitted in our department. 140 of them were diagnosed as stage IV gastric cancer according to AJCC (M1 or T4, N1-3, M0).

We retrospectively assessed the group of 140 patients with stage IV disease. 55 (39.28%) underwent palliative gastric resection and 85 (60.71%) received no operation with or without adjuvant treatment. The latest group was divided into two groups based on the presence of adjuvant chemotherapy. We have excluded from statistical assessment of survival 40 patients with stage IV disease and no treatment at all (28.57%), since complete data on survival were not available.

We have recorded demographic and clinical features, pathology, survival, hospital mortality and morbidity, hospital stay.

The indication for palliative surgery was established according to surgeon's expertise, based on patients' general status, extent of disease, symptoms and resectability of the primary tumour and metastasis.

For descriptive statistics and survival analysis we have used the SPSS software. The Student t-test was used to test the differences between groups, and the chi-squared test of association was used for categorical data. Cumulative survival rates were calculated according to the Kaplan-Meier analysis. Survival differences were compared using log-rank test. P values less than 0.05 were considered statistically significant.

Results

This series consists of 140 patients with stage IV gastric adenocarcinoma. Stage IV of disease was defined by the presence of distant metastasis (M1) in liver, distant nodes, peritoneum, adrenal gland, lung and ovary, or by the presence of T4 (invasion in colon, spleen, and pancreas). Of these, 55 (39.28%) were treated by surgical resection, 30 (21.42%) of them with adjuvant chemotherapy. The remaining 85 patients were treated by adjuvant therapy (45 patients – 32.14%) or had no treatment (40 patients – 28.57%). The adjuvant chemotherapy was mostly 5-FU (5-fluorouracil) based. The dose and the duration of the chemotherapy were decided by the medical oncologist in each case.

The characteristics of the patients are presented in the *Tables 1* and *2*.

The surgical procedures performed were: subtotal gastrectomy (10), total gastrectomy (45), colectomy (6), splenectomy (21), distal pancreatectomy (6), atypical hepatectomy (8), ablation of liver metastases (15): thermal ablation (10 by overheated steam necrosis, 5 by radiofrequency), ovariectomy (4).

Mortality rate associated with palliative surgery was 9% (5/55). The morbidity rate associated with palliative surgery

Table 1. *Characteristics of patients with stage IV gastric adenocarcinoma*

Variable	Surgery + Chemotherapy	Surgery	Chemotherapy
M/F ratio	21/9	19/6	33/12
Age(mean)	59	57	63
Distant metastasis	22 (73.33%)	18 (72%)	36 (80%)
Mean survival	17.8	8.9	6.4

Table 2. *Tumour characteristics*

Variable	Surgery + Chemotherapy	Surgery	Chemotherapy
Location of tumour			
Upper third	7	4	13
Middle third	4	6	5
Lower third	9	8	11
Diffuse	10	7	16
Tumour size			
<5 cm	13	17	11
>5 cm	17	8	34
Histology			
Intestinal type	17	16	26
Diffuse type	13	9	19
Grade of differentiation			
Well	8	10	15
Moderately	10	7	12
Poor	12	8	18
Depth of invasion			
T3	12	14	7
T4	18	11	38
Lymphadenopathy			
N0	0	0	0
N1	2	1	0
N2	14	17	12
N3	14	7	33
Distant metastasis			
Liver	5	3	15
Distant nodes	4	1	6
Peritoneum	5	0	12
Adrenal gland	2	0	0
Ovary	3	5	5
Lung	0	0	2

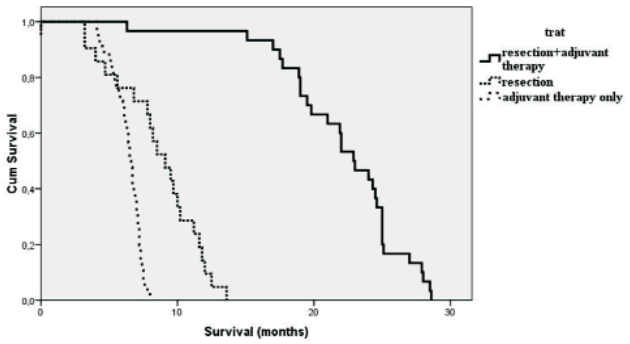

Figure 1. *Resection associated with chemotherapy assured a significantly better survival than each one alone*

was 34.5% (19/55). The main complications were sepsis (4), anastomotic leak (6), wound infection (4), and pneumonia (3).

The mean survival in patients who had palliative gastrectomy and adjuvant chemotherapy was 17.8 (6.3-28.6 months). The mean survival in patients with palliative surgery alone was 8.9 (3.2-13.6 months). Mean survival in non-operated patients with chemotherapy alone was 6.4 months (4.1-8 months). For the group of non-treated patients complete information on survival was not available, so they were excluded from the study.

The mean survival is significantly higher in patients with resection and adjuvant chemotherapy compared with other groups. The survival rate in group of patients treated by surgery alone and by chemotherapy alone was not significantly different *(Fig. 1)*.

The mean hospital stay for patients with palliative gastric surgery was 23 days, higher compared to those with a better stage - 17 days.

Discussion

Despite the recent advances in the imaging diagnosis of gastric cancer, this disease is often far advanced at the time of diagnosis, especially if a screening program is not available. Except the early gastric cancer, the survival is poor. The mean survival for the patients with stage IV gastric cancer is about 16 weeks (7) with only 25% patients still living 34 weeks or longer (7). The response to conventional chemotherapy is also poor in patients with stage IV gastric cancer (5,8).

Radical resection is the primary treatment for gastric cancer. Nevertheless, there is no consent regarding the benefit of resection in patients having advanced or metastatic disease. The palliative gastric resection for this group of patients is subject of controversy and debate. Some studies have shown that palliative gastrectomy allows a survival benefit (9), other studies show that there is no role for palliative gastrectomy in patients with stage IV gastric cancer (6-8).

The reason for performing palliative gastric resection to patients with metastatic or advanced disease is that primary tumour will result in gastric stenosis, perforation, bleeding and debilitating emaciation. Therefore, resection should remove a bulky symptomatic tumour, in order to improve digestive function and quality of life. The tumour itself can release immunosuppressive cytokines so that primary tumour removal could result in an immunologic benefit (12). Otherwise, tumour removal could lead to a better responsiveness of the disease to adjuvant chemotherapy (11).

In our study, the survival rate of patients who underwent palliative gastrectomy and adjuvant chemotherapy was far better comparing with other two groups. The survival advantage was seen also in patients with distant metastasis. Fujisaki et al. have shown that gastric resection and degree of hepatic involvement are the only prognostic factors to predict survival in gastric cancer with concomitant liver metastasis (13). Despite the survival advantages of palliative gastrectomy, some studies reported high mortality and morbidity, related to the surgical procedure (6-8). Recently, progress in anaesthesia and surgical techniques has significantly reduced the risk associated with surgical procedure. In our study, the mortality and morbidity of palliative gastrectomy was 9% and 34.5% respectively, which was not statistically different from mortality and morbidity related to the curative gastrectomy; the mean hospital stay was significantly longer (23 versus 17 days). Taking into account the retrospective nature of our study, no information on the quality of life was available.

In our opinion, selection of the appropriate patients for palliative gastric resection is of the upmost importance for a good outcome. These patients might be individuals with acceptable performance status, in whom resection of the tumour is technically feasible, even if they might have metastatic disease. Since the primary tumour can be removed, with low risk of mortality and morbidity, every attempt should be made to resect the tumour. Leaving the tumour in place, means high risk of poor oral intake, pain, stenosis and bleeding, but also decrease in the likelihood of the response to adjuvant treatment.

Conclusions

Our study showed that palliative gastrectomy associated with postoperative chemotherapy may improve survival in selected groups of patients with stage IV gastric cancer. If the primary tumour can be removed by palliative gastrectomy alone or associated with other resections (colectomy, splenectomy) and liver metastasis can be resected by atypical hepatectomy or treated by thermal ablation, then surgical treatment should be performed as part of a multimodal treatment. Even if the surgical procedures are quite extensive, they are not intended to be curative, but palliative.

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