

Surgical Management of palliative gastric cancer - Literature Review

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Abstract. Introduction: Gastric cancer is the fourth most diagnosed cancer and the second leading cause of death worldwide. Most patients have advanced status of the disease at the diagnosis, requiring palliative treatment. The primary aim of the palliative treatment is to improve the quality of life, according to the patient's individual needs. Objective: This article aims to bring together the most up-to-date perspectives on palliative care in gastric cancer, highlighting the most recommended techniques for the associated symptoms and the different forms of presentation of the disease. Methods: Eleven articles were collected in English, Portuguese and Spanish from 2018 to 2023, on Scielo, PubMed, Uptodate and Google Scholar platforms. Results: In a matched cohort, patients undergoing palliative gastrectomy had a longer median overall survival (OS) than patients without surgery. The indication for palliative resection is established in symptomatic patients who have the prospect of benefiting from complementary palliative care. Discussion: Palliative care for gastric cancer patients are indicated at advanced gastric cancer and metastatic gastric cancer, both feature a poor prognosis. Palliative treatment can be local or systemic. In patients with metastatic cancer, symptom control can be achieved through palliative surgical resection, bypass surgery, radiotherapy and endoscopic techniques. Evidence of malignant gastric obstruction and bleeding are specific symptoms of severe gastric cancer, which can be controlled by endoscopy, surgery and/or radiotherapy. Conclusion: To repair malignant gastric obstruction, the return of oral feeding should be considered, assessing the immediate need or stability of feeding. For an immediate approach, endoscopic intervention with stent placement (SEMS) is indicated, which is also recommended for patients who cannot undergo surgery. In an attempt to avoid complications, promote fewer recurrences and greater stability of oral intake, a palliative gastrectomy or gastrojejunostomy should be chosen.

Keywords. gastric cancer, palliative care, gastrectomy; gastrojejunostomy

1. Introduction

Gastric cancer (GC) is the fourth most diagnosed type of cancer and the second leading cause of death worldwide. (ARRUDA). In Brasil, GC is the fourth most common type among men and the sixth among women. The main histological type is adenocarcinoma, which accounts for approximately 95% of gastric tumours. The risk factors associated with the development of tumours are diet and nutrition, especially overweight and obesity, excessive salt and alcohol consumption, H.pylori infection and smoking. As it is a multifactorial disease, it depends on environmental and genetic factors. (INCA).

Most patients have advanced status of the disease at the diagnosis, mainly distal obstructive and

unresectable tumours with a high chance of recurrence even after a curative resection, requiring palliative treatment. The primary aim of the palliative treatment is to improve the quality of life, according to the patient's individual needs. The relief of obstructive symptoms is the main factor in assessing the effectiveness and results of treatment. Obstructive symptoms include cramps, paroxysmal abdominal pain, inappetence, nausea, vomiting and absence of intestinal motility.

The American Cancer Society evaluates the severity of gastric cancer based on the extent of the cancerous tissue's growth on the gastrointestinal tract and adjacent digestive organs.

The clinical course of the disease and the need of palliative care are assessed using Performance

Status (PS) functional capacity scales. PS scales can be used, such as the Eastern Cooperative Oncology Group (ECOG) scale, which aims to assess the degree to which the disease interferes with the patient's daily activities. The scale is graded from 0 to 5, with 0 indicating no impact of the disease and 5 meaning death. Another method for assessing the patient's functional status is the Karnofsky Performance Scale, which rates between 100 and 0, with 100 meaning no evidence of disease, while 0 means death. A Karnofsky Score (KPS) of less than 50 is associated with a survival of at least 8 weeks. (JÚNIOR). PS > 2, liver and peritoneal metastases and alkaline phosphatase > 100 are considered unfavourable prognostic features. (ARRUDA). Another parameter to evaluate de palliation are the indicators of gastric cancer unresectability, which include the presence of distant metastases, invasion or occlusion of a vascular structure, such as the aorta, hepatic arterial or proximal splenic arteries. Therapeutic options include gastrectomy or gastrojejunostomy (bypass), endoscopic therapy, chemotherapy and radiotherapy. Gastrojejunostomy is the most widely used type of palliative treatment for malignant gastric obstruction, however a palliative gastrectomy has shown higher overall survival (OS). To control bleeding, an endoscopic approach and arterial embolization are preferred.

2. Materials and Methods

Eleven articles were collected in English, Portuguese and Spanish from 2018 to 2023, on Scielo, PubMed, Uptodate and Google Scholar platforms, using the keywords: "gastric cancer", "palliative care", "gastrectomy" and "gastrojejunostomy".

3. Results

According to AN, Hang et. al, out of a total of 3,642 patients with an average age at diagnosis of 42.7 years, 442 (12.1%) underwent palliative gastrectomy and 2,199 (87.9%) patients did not. The surgery group was more likely to receive radiotherapy (23.3% vs. 16.7%) and less likely to receive chemotherapy (73.8% vs. 79.0%). In the matched cohort, patients undergoing palliative gastrectomy had a longer median overall survival (OS) than patients without surgery (13 months [95% CI 11-15 months] vs. 6 months [95% CI 5-7 months], $p < 0.001$). An equivalent result was achieved for cause-specific survival (CSS) (13 months [95% CI 11-16 months] vs. 6 months [95% CI 5-7 months], $p < 0.001$).

For BARCHI, L. C. et al. palliative resection in M1 patients is indicated in cases of obstruction, haemorrhage or perforation. The following article showed 100% agreement with level of evidence B and grade of recommendation 1. The indication for palliative resection is established in symptomatic patients who have the prospect of benefiting from complementary palliative care. However, multivisceral resection in patients with no

expectation of secondary treatment should be avoided so as not to increase mortality or cause dysthanasia. In established terminal cases, less invasive measures are recommended to remedy immediate symptoms, such as the introduction of a nasoenteral feeding tube or endoscopic stents in the event of obstruction and hemostatic radiotherapy in the event of bleeding.

Comparative studies of palliative surgical techniques have shown that the main complications resulting from palliative gastrectomy are abdominal abscess, ileus, effusion, intra-abdominal bleeding and re-obstruction of the gastrointestinal tract. Regarding the incidence of complications between palliative gastrectomy and gastrojejunostomy, the studies showed non-significant results when comparing the techniques. Regarding overall survival after surgery, palliative gastrectomy showed better results. Qin Li et. al, also established a relationship between palliative gastrectomy and improved survival, but only in patients with stage M1, with only one metastatic focus, patients with two or more metastases showed no improvement.

In the analysis [3] of patients with metastatic GC, palliative chemotherapy is indicated, with 94% agreement, level of evidence A and grade of recommendation 1. Palliative chemotherapy is indicated in patients with PS of 0 to 2. In patients with a good response to this treatment, conversion therapy should be evaluated in an attempt to achieve R0 resection. This treatment plan showed 84% agreement, level of evidence C and grade of recommendation 2b. Therefore, palliative chemotherapy is the treatment of choice for patients with stage IV GC, but studies are proposing conversion therapy as a therapeutic alternative.

4. Discussion

Palliative care aims to improve the quality of life of gastric cancer patients by relieving the symptoms caused by the disease, ensuring greater well-being. Palliative strategies should always be individualized and introduced early in order to increase the patient's chance of receiving cancer therapy. Among the indications for palliative care for gastric cancer patients are advanced gastric cancer and metastatic gastric cancer, both of which have a poor prognosis.

Common initial symptoms of gastric cancer are early satiety, nausea, vomiting, anemia, pain and weight loss. Anemia can result from chronic or active bleeding (HARADA). Palliative treatment can be local or systemic. For patients with metastatic cancer, the most effective treatment is cytotoxic chemotherapy, but this is inappropriate for palliating isolated symptoms. All patients diagnosed with advanced gastric cancer should be monitored for symptoms, nutritional and psychological status and social support before starting systemic chemotherapy. In patients with metastatic cancer, symptom control can be achieved through palliative surgical resection, bypass surgery, radiotherapy and endoscopic techniques. Patients with diffuse disease

with one incurable factor should be indicated for gastric resection for tumour reduction followed by adjuvant treatment. For those with several incurable factors, palliative radiochemotherapy is indicated.

At first, for the palliation of local symptoms, palliative RT should be considered, with or without chemotherapy and endoscopic procedures. Whenever these methods cannot be used or show no improvement, palliative surgery should be chosen. Among the local symptoms caused by primary gastric adenocarcinoma highlights gastric outlet obstruction (GOO) or severe bleeding. To control both complications of the disease, multidisciplinary strategies are needed, such as endoscopy, surgery and/or radiotherapy.

4.1 Gastric outlet obstruction (GOO)

Gastroduodenal obstruction significantly increases morbidity by promoting nausea, vomiting, esophagitis, electrolyte imbalance, malnutrition and severe dehydration. In this way, obstruction can interfere with the patient's quality of life.

The GOO scoring system (GOOSS) is used to analyse the degree of obstruction, based on oral intake and the patient's condition, with 0 points for no oral intake, 1 point for liquid diet, 2 points for soft solid diet, 3 points for low-residue or normal diet. Endoscopic examination can assess the degree and location of the stenosis and the need for endoscopic intervention, such as stenting.

In initial treatment, patients with acute intestinal obstruction, generalized peritonitis, fever, leukocytosis, tachycardia, metabolic acidosis or ongoing pain, pneumoperitoneum or signs of ischemia on imaging tests should be referred for emergency exploratory surgery. In subacute and chronic cases, non-surgical forms should be evaluated, as they have greater benefits and lower risks for the patient. The absolute contraindications for surgery in GOO described were recurrent ascites after paracentesis, diffuse palpable abdominal masses, many levels of intestinal obstruction, recent abdominal surgery, previous surgical evidence of diffuse metastatic cancer and proximal involvement of the stomach (MERCADANTE).

The options for palliating gastroduodenal obstruction are a surgical approach- gastrectomy or gastrojejunostomy (GJ) or an endoscopic approach- placement of a self-expanding metal stent (SEMS). Gastrojejunostomy consists of the anastomosis between the stomach and the jejunum, to bypass the gastric outlet obstruction, while palliative gastrectomy consists of resecting the obstructed area of the stomach in order to achieve gastric emptying. The SEMS are inserted endoscopically into the pylorus to reverse an obstruction. GJ has a higher success rate because it allows the patient to eat regularly again for a longer period of time, and also has a lower rate of re-obstruction and need for reapproach, unlike SEMS. However, endoscopic placement of SEMS is associated with an earlier

resumption of oral ingestion, often does not require hospitalization and is less expensive than GJ.

Based on the study of ARRUDA, J.J. et. al. concludes that classic gastrojejunostomy has disadvantages such as the high rate of tumour bleeding, the difficulty of emptying the stomach through the anastomosis and the risk of new obstruction due to tumour growth. In 1997, Kaminishi et al. described a modification of the gastrojejunostomy technique in which a gastric bipartition is performed. By adapting the technique, upper gastrointestinal bleeding, nausea and vomiting were reduced, as well as a faster return to regular feeding. Therefore, gastric bipartition is an alternative to classic gastrojejunostomy, with good results in antral and pyloric obstructions.

4.2 Haemorrhage

Another recurring symptom in cancer patients is bleeding, which occurs mainly in cases where the cancer is ulcerated. The first evaluation should be endoscopic intervention, which is classified as first line treatment.

Endoscopic intervention in these cases is characterized by the placement of metal hemoclips, ethanol, epinephrine and coagulation methods, with the aim of reducing or stopping the bleeding. The next approach for uncontrolled bleeding is transcatheter arterial embolization (TEA). For highly symptomatic and uncontrolled cases, palliative gastrectomy is recommended, but surgical mortality can be high, depending on the patient's nutritional status and the size of the tumour.

4.3 Palliative Surgery Techniques

Palliative gastrectomy or gastrojejunostomy (bypass) are important in relieving symptoms and are generally used in emergencies, with palliative gastrectomy being preferred, especially in obstructive cases. In cases of perforation, gastrectomy is necessary, but this has a high morbidity rate. Prophylactic gastrectomy in some high-risk patients can, in addition to improving symptom control, eliminate possible complications such as bleeding, obstruction, perforation or ascites. Thus, metastatic gastric cancer can benefit from a palliative gastrectomy.

For the treatment of unresectable GC, the gold standard is gastrojejunostomy, either open or laparoscopic.

5. Conclusion

Palliative care Palliative care should be individualized according to each patient's disease presentation, with the aim of improving quality of life through symptom relief. When choosing palliative surgical techniques to repair gastroduodenal obstruction, the severity of the patient and the urgency of the intervention should be assessed, based on performance scales.

To repair malignant gastric obstruction, the return

of oral feeding should be considered, assessing the immediate need or stability of feeding. For an immediate approach, endoscopic intervention with stent placement (SEMS) is indicated, which is also recommended for patients who cannot undergo surgery. In an attempt to avoid complications, promote fewer recurrences and greater stability of oral intake, a palliative gastrectomy or gastrojejunostomy should be chosen. In cases of pyloric or antral obstruction, gastric bipartition should be considered. In the event of bleeding, the first line of treatment is endoscopic intervention and, alternatively, arterial embolization.

No significant results regarding the number of complications were identified among the palliative surgery techniques, palliative gastrectomy and gastrojejunostomy. However, palliative gastrectomy was associated with an improvement in overall survival.

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