Guidelines for the Treatment of Gastric Cancer

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Characteristics of Gastric Cancer

Gastric cancer has three characteristics. Firstly, it is a very common disease. Even today gastric cancer is one of the most prevalent cancers and is responsible for amongst the highest number of deaths. Because gastric cancer is a widespread disease, medical practitioners need to have good knowledge of this disease to practice medicine in daily clinical activities.

Secondly, gastric cancer has different stages. Some gastric cancers have the form of either an early cancer treatable by physicians without surgery or an advanced cancer for which even surgical intervention is ineffective. In the majority of cases, the cancer is diagnosed at an early stage, yet the annual number of deaths is around 50,000.

Thirdly, histologically, gastric cancer can be divided into two types: a well-differentiated type and a poorly-differentiated type. Histologic type is an important indicator of disease progression and patient prognosis, and, therefore, is essential for the treatment of gastric cancer.1

History of Treatment of Gastric Cancer

The treatment of gastric cancer began with the gastrectomy for gastric cancer successfully performed by T. Billroth in 1881. Japan has long been a world leader in the treatment of gastric cancer, with developments such as the extended lymph node dissection developed by T. Kajitani, the gastrocamera developed by T. Uji and the double-contrast technique developed by H. Shirakabe.

1962 saw the establishment of the Japanese Research Society for Gastric Cancer which issued the General Rules for the Gastric Cancer Study, and thus created a forum in which doctors could discuss the diagnosis and treatment of gastric cancer using the same standards to compare treatment outcomes throughout Japan.2

In 1997 the Japanese Gastric Cancer Association was established, publishing its Gastric Cancer Treatment Guidelines four years later in 2001. These were the first guidelines on the treatment of cancers in Japan, and consisted of separate guidelines for doctors’ use and guidelines for general use, and in 2004 a revised edition was published.

Guidelines for the Treatment of Gastric Cancer

Events leading up to the creation of the current set of guidelines for doctors and the Japanese public have been described above. The 2004 guidelines include recommendations on up-to-date treatment techniques for different stages of gastric cancer.

The following text describes the rationale behind the creation of these guidelines, namely: 1) to identify the proper indications for the treatment of gastric cancer, 2) to minimize the
difference between centers, 3) to seek to improve safety and treatment outcomes, 4) to eliminate unnecessary treatment, and 5) to facilitate mutual understanding between doctors and patients.

The guidelines are based on the principle of selecting the right treatment according to stage. Informed consent is important for the selection of treatment, and doctors have a responsibility to explain the available treatment options and various stages of treatment to patients.

**Treatment Modalities According to Stage of Gastric Cancer**

The stage of gastric cancer is determined by the depth of wall invasion and the status of lymph node metastasis. The depth of wall invasion can be assessed fairly accurately by means such as barium meal study, endoscopy and endoscopic ultrasound, but as clinical measurement and clinical assessment of the status of lymph node metastasis are inaccurate, treatment is determined mainly on the depth of wall invasion.

Although there are exceptions, early cancer, in which invasion is restricted to the mucosa or the submucosa, can be managed by endoscopic treatment or limited surgery. However, ordinary cancer that invades the muscular layer, the subserosal layer and the serosa can be treated using standard surgery, while advanced cancer that invades the surrounding organs requires extensive surgery.

Standard surgery is defined here as distal gastrectomy i.e. resection of two thirds or more of the stomach, or total gastrectomy, together with D2 lymph node dissection. Limited surgery is also known as function preserving surgery and includes pylorus-preserving gastrectomy, proximal gastrectomy, segmental gastrectomy and partial gastrectomy.

**Endoscopic Treatment**

With endoscopic treatment, note the standards for application and residual recurrence. Endoscopic treatment is limited to mucosal cancer, and is applied to well circumscribed, well differentiated type cancers of up to 2cm in size. Recently large lesions can also be resected using an insulated-tip knife.

Data for 3,000 people who underwent endoscopic treatment at typical centers in Japan showed that the frequency of residual recurrence following endoscopic treatment is 12%, and that the period until recurrence varies. Consequently, regular endoscopic examinations are recommended following this treatment.3

**Laparoscopic Surgery**

Even though laparoscopic surgery on gallstones offers advantages including reduced pain, faster recovery, shorter hospital stay and earlier return to social activity, laparoscopic surgery for gastric cancer is currently still regarded as a technique performed for research purposes at some centers and is not recognized as a routine treatment technique.

S. Kitano of Oita University was one of the first in the world to perform laparoscopic surgery for gastric cancer. Alongside animal experiments and basic research, he carried out case studies, case-control studies and clinical trials, verified his own surgical outcomes in terms of both safety and efficacy, and reported the data to overseas journals.4–7

**Reach of the Guidelines**

Guidelines are not legally binding, are for guidance purposes only, and may be followed at the doctor’s discretion. The binding force of guidelines against decision-making of clinical behavior is the same or not stronger than that of recommendation.

Anything that is applicable to 95% or more of patients in clinical practice is considered a standard. The percentage of patients covered by the guidelines is around 60–95%.

The guidelines are based on evidence and may assist decision-making by doctors and patients. Guidelines are intended to prevent potentially self-righteous clinical behavior.

**Clarification of Routine Diagnosis and Treatment**

The guidelines are based on the results of pathological diagnosis of resected specimens. It is important to continue to accumulate data based on clinical diagnosis during the course of treatment of gastric cancer in order to reduce the risks of intervention for patients and to make
further advances in treatment techniques.

Methods such as endoscopy and laparoscopy are being actively introduced to the treatment of gastric cancer. It is important not only to analyze potential short-term complications resulting from such new treatment techniques, but also to assess the long-term safety and efficacy including recurrence rate, survival rate and quality of life (QOL).

In decision-making for routine diagnosis and treatment, it is necessary to consider three factors, namely the doctor’s opinion, the patient’s opinion and the evidence. From the view point of clinical ethics, it is also necessary to ensure there is an ethical basis for clinical intervention. To this end consideration of medical indications, QOL, patient references, and contextual features is required.

References