

Gastric cancer in China: a review¹

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In recent years the mortality and morbidity of gastric cancer has been increasingly recognized in China, and a National Collaborating Group for Gastric Cancer was established in 1978 to promote clinical research in this field.

Epidemiology and aetiology

Following a large retrospective survey (1973–75) of tumour mortality rates and epidemiological investigations (Li & Li 1980), not only is the age-adjusted death rate for gastric cancer now known (20.93/100 000 males, 10.16/100 000 females), but information relating to geographic distribution has also been obtained. The Qinghai, Ningxia and Gansu provinces in the North West have the highest mortality rates in China, followed by the Jiangsu, Shanghai, Shejiang and Fujiah provinces in the South East along the coast, and Jilin, Liaoning and other provinces in the North East. The mortality rate in the middle part of South and South West China is comparatively low. In some of the provinces with a higher mortality rate there are a number of high-risk areas in focal distribution which results in many counties having a mortality rate greater than 60/100 000 population. Among these is Changle County, in the Putian Prefecture of Fujian Province, which has the highest mortality from gastric cancer in the whole of China (120–147/100 000 males). Environmental factors vary greatly in these high-risk counties which therefore provide interesting opportunities for further research in the epidemiology and aetiology of gastric cancer.

At present a comprehensive study of the epidemiology and aetiology of gastric cancer is proceeding in both high- and low-risk areas in different geographical locations. The preliminary data obtained from this study show the incidence of chronic gastritis and atrophic gastritis to be parallel with the mortality rate of gastric cancer. The data have also shown that the levels of nitrate (NO₃) and nitrite (NO₂) in drinking water and vegetables are higher in high-risk than in low-risk areas; and the NO₃ and NO₂ levels in the fasting saliva and gastric juice of patients with chronic gastritis were also found to be higher in high-risk than in low-risk areas (Xu 1979a). Furthermore, from retrospective case studies it has been found that there is a familial tendency in gastric cancer. The risk of gastric cancer among blood relatives was 7.75 times greater than in controls. In addition, a high incidence of this disease was noted in the parents of stomach cancer patients: it was 3.53 times higher in cancer families than in controls.

Research for early diagnosis

Early diagnosis is the key to improving the outlook for patients with gastric cancer. A lot of work has been done in this field and some progress has been made.

The fibergastroscope has been used in China since 1973. The correct diagnostic rate of superficial gastric cancer by macroscopic observation with the fibergastroscope is 66.8%; this rises to 82.96% with the use of biopsy (Xu 1978). The success rate of biopsy varies from 30 to 94.4% in different units. Endoscopic examination with dye spray and mucosal staining or combined with isotope (¹⁶⁹Ga) and fluorescein sodium has been employed in many units in an attempt to obtain an accurate and more detailed diagnosis of gastric cancer.

X-ray diagnostic techniques have been improved by the use in some provinces of double

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contrast radiography. It appears to be helpful in improving the diagnosis of superficial gastric cancer before operation. A correct diagnostic rate of 8.5% has been reported from Shanghai Zhong Shan hospital (Xu 1978).

Exfoliated cytological examination is a simple and useful method which has been widely employed in China. Reports from various provinces indicate a positive diagnostic rate of 88.4–94.5% in gastric cancer, including superficial gastric cancer (Xu 1978). The key to success lies in obtaining a sufficient amount of gastric mucosal cells. A pressure of 8–10 mmH₂O must be sustained to obtain specimens for cytology.

Great efforts have been made to establish a simple method for mass screening for gastric cancer, using nonspecific biochemical and immunological tests on gastric juice, urine, serum and skin. A positive diagnostic rate of about 80% (63–94.8%) has been reported, but the majority of patients investigated had stage III or IV disease; a high diagnostic rate (14.7–82.6%) was also reported for other malignancies (Xu 1978). However, there was also a high false positive rate in benign gastric disease. These simple, nonspecific methods are therefore not considered to be ideal for mass screening, and some hospitals have combined several such tests in order to raise the positive rate and reduce the false positive rate.

Mass surveys have also employed a step-screening method. The first screening step involves the use of clinical data and simple biochemical tests; the second involves cytological examination or a barium meal in suspicious cases; finally fibergastroscopic examination is used to make a diagnosis. Of 393 812 people who have undergone such screening, 307 (0.078%) were found to have gastric cancer (Xu 1979a). In the course of the survey, some benign lesions which sometimes develop into gastric cancer were also picked up; it is important to follow up these cases at regular intervals, especially those with atypical metaplasia or severe intestinal metaplasia of the gastric mucosa.

Studies on treatment

The percentage of advanced cases of gastric cancer is currently still very high; most cases are stage III and IV. In a series of 8267 cases, the operative rate was 78.2% (62.3–92.6%) and the resectable rate only 56.9% (38.2–81.4%) (Xu 1979a). The 5-year survival rate in those who underwent resection was 20.8%. In studies carried out in the Peking area, length of survival following laparotomy alone was 5.3–6.2 months and following by-pass operation it was 7.2–7.7 months (Wang *et al.* 1978). The average survival time following palliative resection was 16.4 months, and the 5-year survival rate was 2.7–7.1%. From this it would seem that, providing the general condition and local anatomical condition of the patient are favourable, resections should be carried out in most cases of advanced gastric cancer, even those with stage IV disease. As more than 40% of cases of gastric cancer in the surgical departments of the various hospitals are stage III, an extended radical operation seems to be indicated (Xu 1979b).

Adjuvant therapy is also widely employed in China. Some studies on the use of camptothecin for preoperative chemotherapy have reported objective improvement in most patients (Xu 1979b). In some it seemed that the tumour had disappeared. Recently, preoperative radiotherapy for gastric cancer has been used in some hospitals, with patients usually being exposed to 3600–4000 rad. Although there are no long-term results of preoperative chemotherapy and radiotherapy in China, they do seem to be effective in stage III cases.

In general, most hospitals use combined therapy with Chinese traditional medicine and chemotherapy for adjuvant therapy postoperatively. Traditional medicine is useful in reducing the side effects of chemotherapy and prolonging survival.

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