

STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation
Title and abstract	1	<p>(a) The changing trends of clinicopathologic features and survival duration after operation for gastric cancer in Northeast China from 2000 to 2014</p> <p>(b) The clinical features of gastric cancer in the Northeast China changed during the observation period. The increasingly detection of early gastric cancer and more standardized surgical treatment effectively prolonged lifetimes. However, compared with the other countries, the result is still not optimistic. In order to improve the prognosis, early diagnosis and multi-disciplinary treatment are needed.</p>
Introduction		
Background/rationale	2	In the past few decades, although the prognosis of patients with gastric cancer has been improved in China, the survival rate is still sluggish. However, the prognosis also varies significantly by geographic area
Objectives	3	The result of this study would help people have a better understand of the characteristics and developing trend of gastric cancer. It may also provide a reference for the diagnosis and prevention of regional gastric cancer.
Methods		
Study design	4	This study reviews and analyses 5887 patients who were treated for gastric cancer at the Cancer Hospital Affiliated to Harbin Medical University (Cancer Hospital) from January 2000 to December 2014.
Setting	5	This study reviews and analyses 5887 patients who were treated for gastric cancer at the Cancer Hospital Affiliated to Harbin Medical University (Cancer Hospital) from January 2000 to December 2014.
Participants	6	<p>The case inclusion criteria including,</p> <p>(1) Patients who pathologically diagnosed with gastric cancer and can also access to the complete cases.</p> <p>(2) Patients without neoadjuvant chemotherapy or perioperative chemoradiotherapy.</p> <p>(3) Patients without other gastric tumours (lymphoma, stromal tumour, residual gastric cancer, etc.) and malignant tumours (breast cancer, colorectal cancer, etc.) at the same time</p> <p>(4) Cases without surgery or resection, such as laparotomy, gastrojejunostomy, and endoscopic mucosal dissection are excluded.</p>
Variables	7	Not applicable
Data sources/ measurement	8*	The data is this study is from the database of gastrointestinal surgery in Cancer Hospital.
Bias	9	However, as previous report , adjuvant chemotherapy regimens have changed significantly in the past of decades, which has led to heterogeneity in chemotherapy, number of cycles, and treatment regimens. Therefore, the details of adjuvant chemotherapy were not considered for statistical analysis in this study.
Study size	10	This study reviews and analyses 5887 patients who were treated for gastric cancer at the Cancer Hospital Affiliated to Harbin Medical University (Cancer Hospital) from January 2000 to December 2014.
Quantitative variables	11	The data includes demographics, clinicopathological features, diagnosis, surgical records, postoperative results, and follow-up visit.
Statistical methods	12	The commercially available software SPSS is used for statistical analysis. Put all patient's data into SPSS database and run the analysis. The mean value represent for the continuous data. Student's T test is used for evaluating the statistical difference among mean value. Categorised variables are evaluated by the Pearspon X ² test. The cumulative survival rate is calculated by Kaplan-Meier method and the difference among different groups is evaluated by long-rank test. Cos regression model is used for multivariate prognostic. P<0.05 is the standard for considering if the data statistically significant.

Results

Participants	13*	From January 2000 to December 2014, a total of 5,887 patients were pathologically confirmed with gastric adenocarcinoma.
Descriptive data	14*	Among these patients, 268 people were found to be unable to be resected for laparotomy. 370 patients only received palliative resection. 505 patients did not receive surgery, and the remaining 4744 patients underwent gastrectomy successfully. The overall resection rate was 80.6%. This study analysis the data from these 4744 patients who got the gastrectomy successfully.
Outcome data	15*	From January 2000 to December 2014, a total of 5,887 patients were pathologically confirmed with gastric adenocarcinoma. Among these patients, 268 people were found to be unable to be resected for laparotomy. 370 patients only received palliative resection. 505 patients did not receive surgery, and the remaining 4744 patients underwent gastrectomy successfully. The overall resection rate was 80.6%. This study analysis the data from these 4744 patients who got the gastrectomy successfully.
Main results	16	With the time went by, the data shows that the postoperative survival rate has a significant increase from 2000 to 2014. In the past 15 years, compared with Phase 1 and 2, tumour size is smaller in Phase 3 ($P < 0.001$), but the proportion of the high-medium differentiated increased ($P < 0.001$). The proportion of early gastric cancer gradually increased from 3.9% to 14.4% ($P < 0.001$). A surprising improvement was observed in the mean number of retrieved lymph nodes, ranging from 11.4 to 27.5 ($P < 0.001$). The overall 5-year survival rate increased from 24% in Phase 1 to 43.8% in Phase 3. Through the multivariate analysis, it was found that the age, tumour size, histologic type, TNM stages, depth of invasion, lymph node metastasis, surgical approach, local infiltration, radical degree, the number of retrieved lymph nodes and age grouping were independent risk factors which would influence the prognosis of the patients with gastric cancer.
Other analyses	17	According to the subgroup analysis by TNM staging, it shows that the five-year survival rate of patients with stage I + II and III was significantly improved compared with the earlier stage ($P = 0.000$). In contrast, the five-year survival rate of patients with stage IV did not change significantly ($P = 0.210$).

Discussion

Key results	18	Overall, based on our 15 years of experience in treating patients with gastric cancer, we have observed that attaching great importance to the perioperative period, the improvement of surgical techniques and techniques, and the significant improvement in patient survival. Despite this, even when patients with gastric cancer are diagnosed with a local disease, their prognosis is not optimistic. Obviously, surgery alone is not enough to achieve the ideal value for survival. We urgently need to develop a multi-modal, multi-disciplinary and individualized comprehensive treatment system to achieve better results.
Limitations	19	The limitations of this study include: (1) The results are from a single center. (2) For a small number of patients in the last 5 years, the follow-up is incomplete. (3) There may be bias in the analysis of patients treated in consecutive time periods with different follow-up times. (4) There is insufficient evidence on adjuvant chemotherapy and neoadjuvant chemotherapy.
Interpretation	20	More advance technologies and concepts have been involved into the diagnosis and surgery of gastric cancer. The improvements including the dissection method, resection range, surgical techniques and instruments, the emphasis on perioperative nursing and the strengthening of the concept of rapid recovery effects and help the patients with gastric cancer directly or indirectly.
Generalisability	21	Overall, based on our 15 years of experience in treating patients with gastric cancer, we have observed that attaching great importance to the perioperative period, the improvement of surgical techniques and techniques, and the significant improvement in patient survival.

Other information

Funding	22	Department of Gastroenterological Surgery, Harbin Medical University Cancer Hospital
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*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and

unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.