

Use of adjuvant chemotherapy after pancreatoduodenectomy for pancreatic cancer: a nationwide population-based study in the Netherlands



Catharina Cancer Institute

MJAM Bakens^{1,2}, L van der Geest², M Bongers¹, HWM van Laarhoven³, G-J Creemers⁴, MGH Besselink⁵, VEPP Lemmens^{2,6}, IHJT de Hingh¹

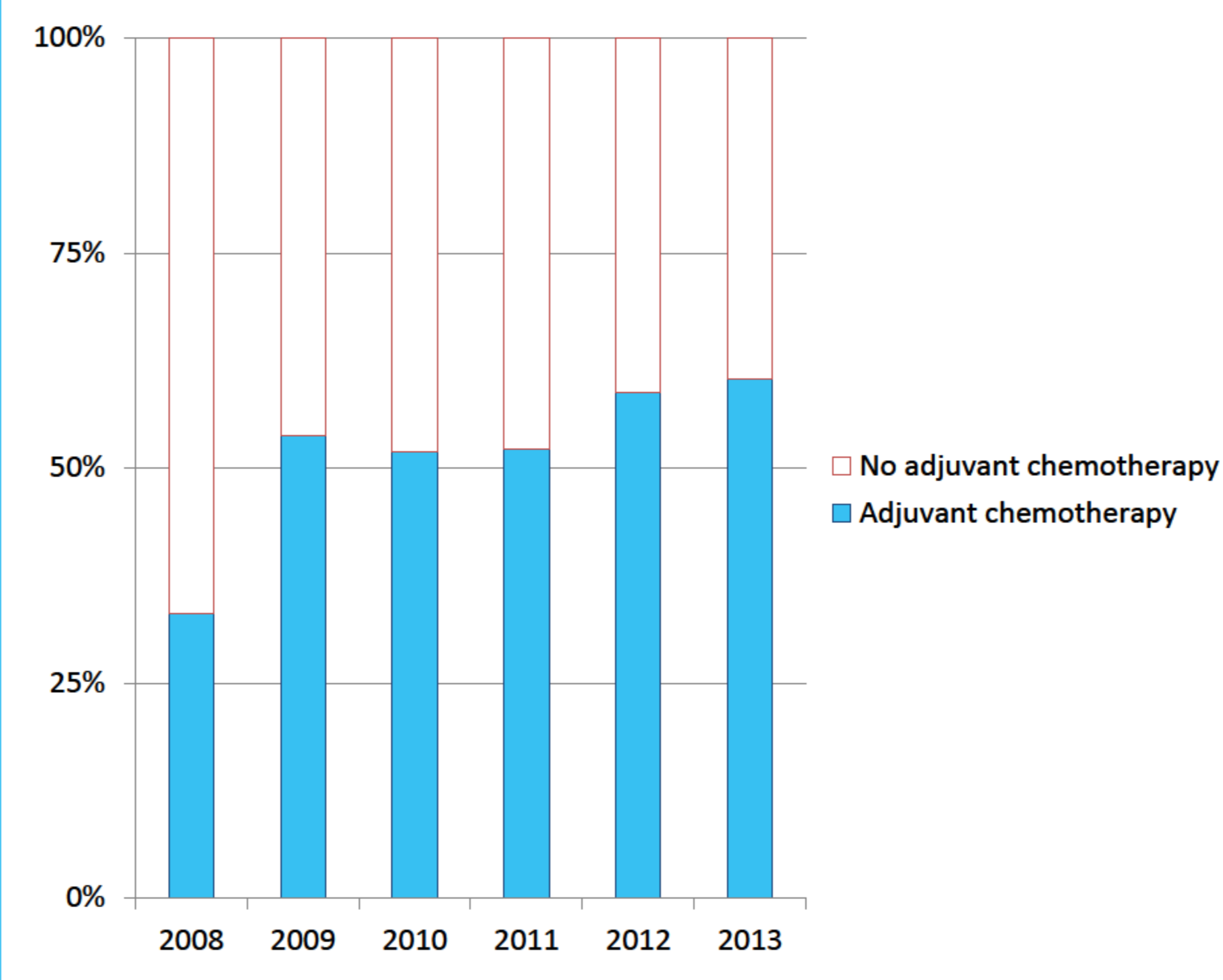
Introduction

In patients with cancer of the pancreatic head, the only chance for long-term survival is pancreatoduodenectomy. Adjuvant chemotherapy following pancreatoduodenectomy in pancreatic-cancer patients is considered standard care since it has been shown to improve overall survival, regardless of age, gender and tumour stage. However, not all surgically-treated patients receive adjuvant chemotherapy. The current-nationwide study investigated which patient and tumour characteristics influenced the likelihood of receiving adjuvant chemotherapy and the effect of chemotherapy on overall-survival.

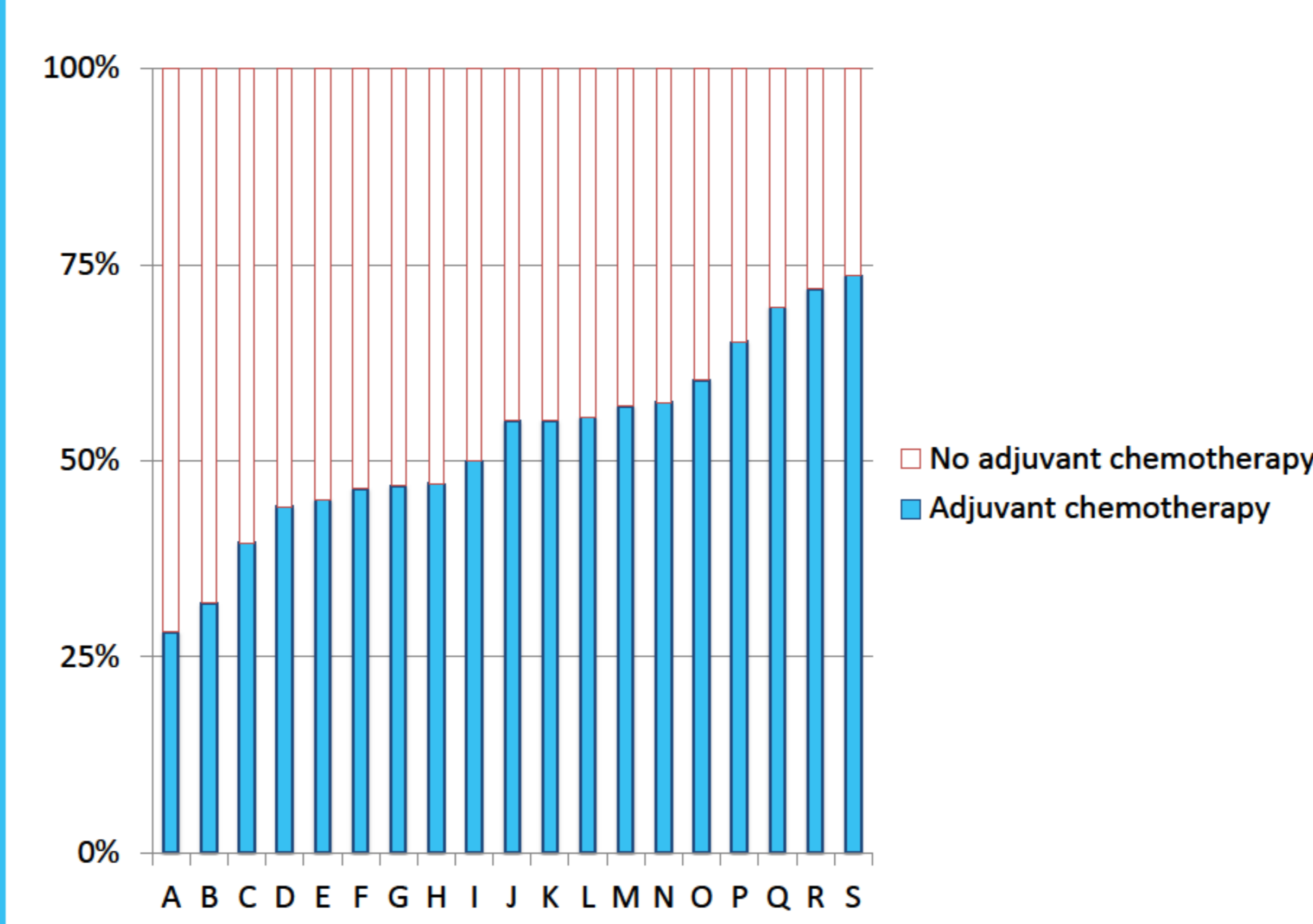
Methods

Data were obtained from the Netherlands Cancer Registry. All patients who underwent pancreatoduodenectomy for pancreatic cancer between 2008 and 2013 in a pancreatic centre in the Netherlands were included. Patients' deceased within 90-days after surgery, having a missing-tumour stage, tumour-in-situ or neuro-endocrine tumour were excluded. Patients were categorised based on treatment with adjuvant chemotherapy. Groups were compared using chi-square test. Influences of patient characteristics and pancreatic centres on the likelihood of adjuvant chemotherapy was analysed by multi-level logistic regression analysis. Differences in time of first administering of chemotherapy were tested for significance by Mann-Whitney U test. Overall-survival was assessed by Kaplan-Meier method and Cox-regression analysis.

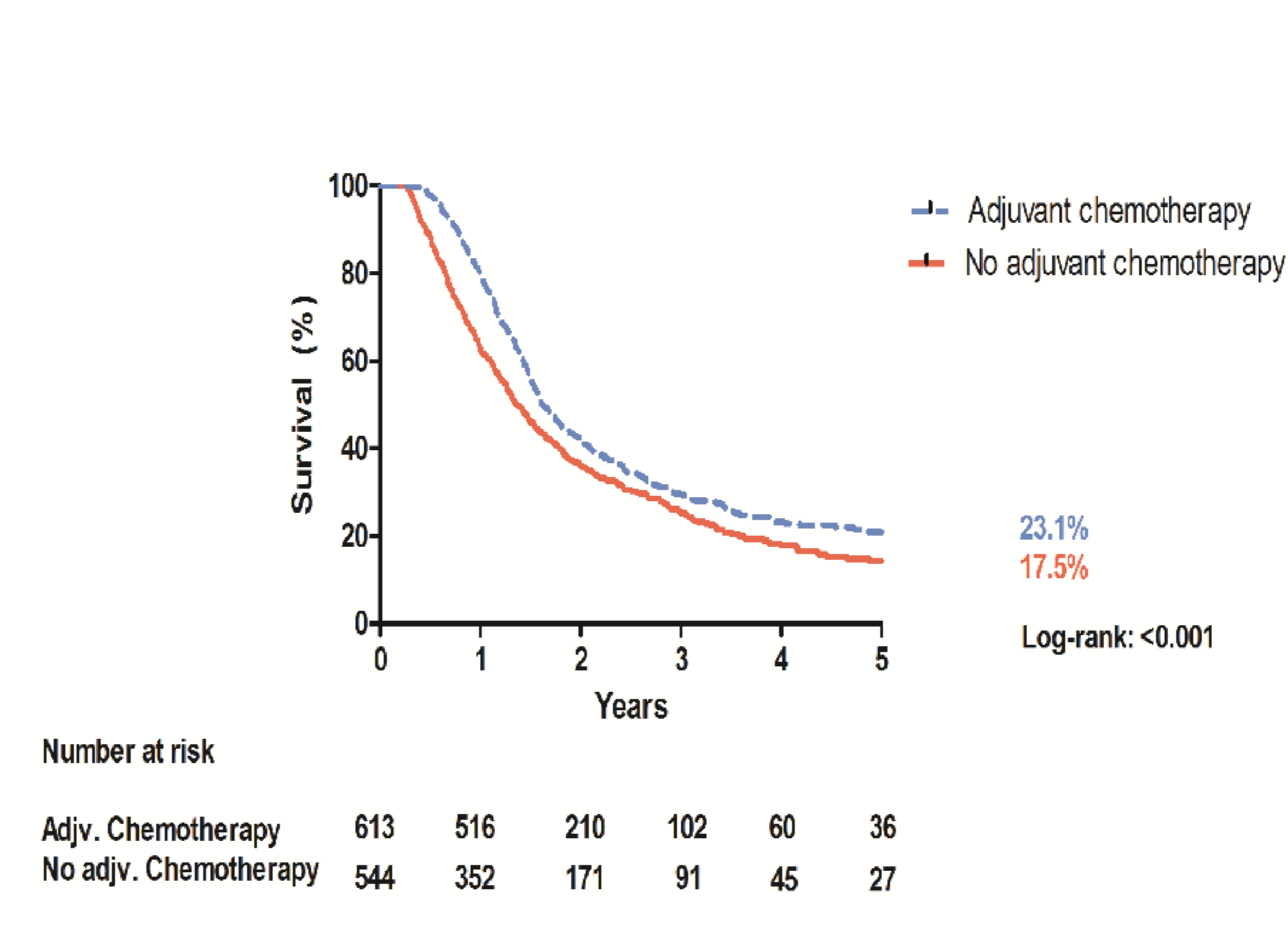
The use of adjuvant chemotherapy in the Netherlands



Dutch-pancreatic centres and use of adjuvant chemotherapy



Kaplan-Meier stratified for adjuvant chemotherapy



Results

In total 1,201 pancreatic-cancer patients were included. Of these 1,201 patients diagnosed with pancreatic carcinoma, 645 (54%) underwent adjuvant chemotherapy. Proportions differed between pancreatic centres, ranging from 28% to 74%, $p < 0.001$. Median time to initiation of adjuvant chemotherapy was 6.7 weeks and was not significantly different between centres. TNM stage II/III patients were more likely to receive adjuvant treatment than stage I patients (56% vs. 33%, $OR = 2.85$ 95%CI 1.85-4.37). Patients older than 60 years were less likely to receive adjuvant chemotherapy compared to younger patients (60-75 years: 56% vs. 70%, $OR = 0.47$, 95%CI 0.33-0.66; Above 75 years: 15%, $OR = 0.06$ 95%CI 0.03-0.10). Furthermore, patients diagnosed in 2008 had a significantly lower likelihood for receiving adjuvant chemotherapy treatment compared to diagnosis in 2013 (33% vs. 58%, $OR = 0.26$ 95%CI 0.15-0.45). Survival was prolonged in patients treated by adjuvant chemotherapy with 5-year survival rates of 21% versus 13%, $\log\text{-rank} < 0.001$. In Cox-regression analyses adjuvant chemotherapy significantly affected survival (Hazard Ratio=0.72 95%CI 0.63-0.84).

Conclusion

The proportion of pancreatic-cancer patients treated by chemotherapy following pancreatoduodenectomy differed between pancreatic centres. As treatment with adjuvant chemotherapy prolonged survival, the selection of patients for adjuvant chemotherapy and inequalities between pancreatic centres are subjects of further analysis.

Passion for life.

1. Department of surgery, Catharina hospital Eindhoven, the Netherlands
2. Department of research, Netherlands Comprehensive Cancer Centre (IKNL), Utrecht, the Netherlands
3. Department of oncology Amsterdam Medical Centre, Amsterdam, the Netherlands
4. Department of oncology, Catharina hospital Eindhoven, the Netherlands
5. Department of surgery, Amsterdam Medical Centre, Amsterdam, the Netherlands
6. Department of Public Health, Erasmus Medical Centre, Rotterdam, the Netherlands

Contact details: maikel.bakens@catharinaziekenhuis.nl

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