



## **Aanvraag gegevens ten behoeve van wetenschappelijk onderzoek DUCA201609**

### **Datum**

Juni 2016

### **Contactpersoon**

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### **Beschrijving**

#### **Background**

A comparison between outcomes of oesophageal and gastric cancer surgery across Europe showed a significant higher adjusted 30-day mortality rate in patients with gastric cancer in the Netherlands (6.9%) compared with Denmark (4.3%) and Sweden (3.5%)<sup>1</sup>. In this study, Dutch results were based on data derived from the Netherlands Cancer Registry (NCR) between 2006 and 2009. Since 2009, multiple measures were taken with the aim to improve the quality of the surgical care for this group of patients in the Netherlands. Minimum annual hospital volume standards were introduced and, in 2011, a nationwide clinical audit, the Dutch Upper GI Cancer Audit (DUCA), was initiated to collect prospectively reliable information on processes of care and outcomes of patients who are operated for oesophageal or gastric cancer. The audit involves continuous performance monitoring, benchmarking and regular online feed-back of individual hospital results compared to the national average. Since then, postoperative mortality and morbidity rates have strongly improved.

Over the past 5 years, detailed information on patient comorbidities and postoperative complications have been collected in the DUCA. This provides the opportunity to perform an updated and more in-depth comparison of Dutch, Swedish and Danish data.

## **Objectives**

Primary objective of the current study is to evaluate potential differences in patient population, treatment strategies and outcomes for patients undergoing oesophagogastric cancer surgery in the Netherlands, Sweden, and Denmark, using up-to-date and detailed patient information from the participating countries.

## **Primary endpoint**

- 30-day mortality after surgery

## **Secondary endpoints**

- Postoperative complications (overall, pulmonary complications, cardiac complications, chylous leak, anastomotic leak, postoperative bleeding, thromboembolic complication, intra abdominal abscess, necrosis gastric tube reconstruction/interponat, recurrent laryngeal nerve injury, other)
- Failure-to-rescue
- Reinterventions (radiologic, endoscopic, surgical),
- Duration of hospital stay

A second objective is to compare patient population, treatment strategies and hospital volumes between the participating countries:

- Patient: Gender, age, BMI, ASA score
- Tumour: Histological tumour type, tumour location, cT score, cN score, cM score.
- Treatment: Neoadjuvant treatment (type), diagnostic laparoscopy, intention of surgery, type of resection, type of reconstruction, location anastomosis
- Hospital: Annual procedural volume

## **Hypothesis**

Postoperative results of oesophagogastric cancer surgery in the Netherlands are now comparable with international results.

## **Methods**

A retrospective comparative cohort study of prospectively collected data from the Dutch upper-GI cancer audit and both the Swedish and Danish Upper GI Cancer Audit (2012-2015) will be performed.

Results will be assessed according to country and stratified according to type of resection (oesophagectomy or gastrectomy). Differences between countries will be tested using the chi-square test. Adjusted results for post-operative complications and 30-day mortality rates will be analyzed using a multilevel logistic regression model.

To perform a multilevel logistic regression it is essential that all data from the different

registries will be aggregated into one dataset. This dataset will be available only for the research group and will be used for research purposes described in this application.

### **References**

1. Dikken JL, van Sandick JW, Allum WH, et al. Differences in outcomes of oesophageal and gastric cancer surgery across Europe. *BJS*. 2013;100(1):83-94.
2. Annual report (2014) Dutch Institute for Clinical Auditing.  
(<http://www.clinicalaudit.nl/jaarrapportage/2014/duca.html>)

### **Beoogde publicatie(s)**

- Results of oesophageal cancer surgery; a comparison between Sweden, Denmark and the Netherlands.
- Results of gastric cancer surgery; a comparison between Sweden, Denmark and the Netherlands.