



**Karolinska  
Institutet**

**Institutionen för molekylär medicin och kirurgi**

# **Riskfaktorer för malnutrition vid esofaguscancerkirurgi**

**AKADEMISK AVHANDLING**

som för avläggande av medicine doktorsexamen  
vid Karolinska Institutet offentligen försvaras i Nanna Svartz auditorium,  
Karolinska universitetssjukhuset, Solna

**Fredagen den 12 december 2008, klockan 10.00**

av

**Lena Martin**

Leg. dietist

*Huvudhandledare:*

Medicine doktor Pernilla Lagergren  
Karolinska Institutet  
Institutionen för molekylär medicin och kirurgi

*Bihandledare:*

Professor Ingvar Bosaeus  
Göteborgs universitet  
Sahlgrenska Akademin  
Avdelningen för klinisk näringslära

Professor Jesper Lagergren  
Karolinska Institutet  
Institutionen för molekylär medicin och kirurgi  
Enheten för esofagus- och ventrikelforskning,  
ESOGAR

*Fakultetsopponent:*

Professor Olle Ljungqvist  
Karolinska Institutet  
Institutionen för klinisk vetenskap,  
intervention och teknik, CLINTEC

*Betygsnämnd*

Docent Folke Hammarqvist  
Karolinska Institutet  
Institutionen för klinisk vetenskap,  
intervention och teknik, CLINTEC

Docent Brita Karlström  
Uppsala Universitet  
Institutionen för kostvetenskap

Professor Bruno Walther  
Lunds Universitet  
Institutionen för kliniska vetenskaper,  
Kirurgi, Lund

**Stockholm 2008**

## ABSTRACT

---

**Background:** For those suffering from oesophageal cancer the food related situation is changed for all time to come. Dysphagia, pain while eating and weight reduction are the most common symptoms of oesophageal cancer. Unintentional prediagnostic weight loss affects nearly 80 % of the patients. The operation is one of the most demanding and traumatic surgical procedures, often involving surgery in the abdomen, chest and neck. The anatomic changes results in eating difficulties postoperatively. The principal aim of this thesis was therefore to clarify the weight development that occurs after oesophageal cancer surgery and to identify causes to and interventions against malnutrition.

**Methods:** The Swedish Esophageal and Cardia Cancer register (SECC) was used for all four nationwide and population-based studies of this thesis. Nearly all patients requiring surgery for oesophageal or cardia cancer in Sweden during the period April 2001 through 2005 were included. Comprehensive data about patient and tumour characteristics, surgical procedures and complications were collected prospectively and evaluated uniformly according to a study protocol. Patients responded to a written study-specific questionnaire concerning body height and weight and a health-related quality of life questionnaire (EORTC QLQ-C30) with an oesophageal-specific module (EORTC QLQ-OES18) 6 months and 3 years after surgery. As the four studies were done in different time periods the number of patients differed and the 3 year follow-up was only used in the fourth study.

**Results:** Study I revealed a substantial level of weight loss 6 months postoperatively. Every fifth patient lost at least 20 % of their preoperative body weight. Appetite loss, eating difficulties and pain while eating were significantly associated with weight loss of at least 20 %, while nausea or vomiting, dysphagia or reflux were not.

Study II indicated a decreased risk of weight loss for patients with a jejunostomy compared to those without. Compared to the group without jejunostomy, patients with jejunostomy were seemingly less often discharged to other care homes than their own home, while the length of stay at hospital was longer.

Study III identified an about 2-fold increased risk of postoperative weight loss among patients having neoadjuvant treatment and of female sex. Preoperative weight loss was associated with a decreased risk. Age, tumour stage and location, type of oesophageal substitute, suture technique and postoperative complications did not influence weight loss.

According to Study IV, patients did not regain the loss of weight within 3 years of surgery. Overweight patients had a particularly increased risk of weight loss. The weight loss did not differ between long-term survivors and those who died within 3 years of surgery.

**Conclusions:** Oesophageal cancer surgery is often followed by malnutrition and linked with appetite loss, eating difficulties and pain while eating. Jejunostomy might decrease the risk of malnutrition, while neoadjuvant therapy and female sex increase this risk. The weight loss seems to persist long after the surgery.

Keywords: Malnutrition, neoplasm, body mass index, weight loss, surgery

**ISBN 978-91-7409-156-4**