Søknadsinformasjon

Utlysning	Nordic Cancer Union Research Grant, 2014
Søknad	Influence of obesity surgery on cancer risk in a Nordic population-based cohort study
Søknadsid	154860
Innsendt av	Jesper Lagergren

Oppgave: Progress report

Tilordnet	Jesper Lagergren
Status	Arkivert
Opprettet	04.02.2016

RAPPORT

Briefly describe the project in a language understandable to non-scientists

Obesity surgery is used increasingly due to the increasing occurrence of obesity, but the cancer risk following such surgery is uncertain. This project addresses two hypotheses:
1) Obesity surgery decreases risk of obesity-related cancer, and 2) increases risk of colorectal cancer.

Registries assessing obesity surgery and cancer in all Nordic countries are merged to create a large cohort of obesity surgery patients and estimate their cancer risk compared to the background population and to non-operated obese patients.

If our hypotheses are proven true, prevention and surveillance of high-risk individuals for cancer might be considered following obesity surgery.

Summarize the major findings of the project

There are presently no results available from the Nordic project, but we have used the Swedish part of the database to conduct other studies of relevance for obesity surgery (see list of publications below). The present Nordic project is planned and scheduled to be completed during year 2016. Since 2014, we have created an experienced research group; received all approvals from relevant ethical review boards and data inspectorates in all 5 countries; collected, checked and merged all data; and initiated the final data management. We have also completed a validation study to assess the quality of the data in the hospital discharge registries, which is important for assessing the validity of the Nordic project.

The main findings from the Swedish data are listed:
1. The absolute risk of mortality following obesity surgery is low, but there is an increased relative risk of mortality associated with male sex, diabetes, congestive heart failure, and open surgical access.
2. Diabetes and peptic ulcer increases the risk of marginal ulcer following obesity surgery, while hyperlipidemia, hypertension, and chronic obstructive pulmonary disease are not. Lower doses of aspirin, nonsteroidal anti-inflammatory drugs, and selective serotonin reuptake inhibitors does not increase the risk, but higher doses of aspirin do.
3. The risk of oesophageal adenocarcinoma might not decrease after obesity surgery, but larger studies with longer follow-up are needed.
4. The prognosis in rectal cancer, but not in colon cancer, is worse following obesity surgery compared to in non-operated obese patients.
5. Obesity surgery registration in the Swedish National Patient Registry has high accuracy and is a reliable source of data to identify patients having undergone obesity surgery.
6. We have highlighted the value of weight loss in the treatment of gastro-oesophageal reflux in a review article.

Describe how the project has increased our knowledge of the prevention, cause and/or cure for cancer

There are presently no results available from the Nordic project, but we have used the Swedish part of the database for studies of relevance for obesity surgery. The progress of the present study is according to plan. We expect this project to contribute importantly to the knowledge of the effects of obesity surgery regarding cancer risk. This is interesting from a cancer aetiological point of view, and also of great clinical relevance. The research will show how weight loss influences cancer risk. If protective effects are established between obesity surgery and obesity-related cancer, preventive actions in certain groups of known high-risk patients for obesity-related cancer might be considered. If an increased risk of colorectal cancer is established, the results indicate a role for colonoscopic surveillance after obesity surgery to identify colorectal tumours at an early and curable stage. Thus, this research might prompt new surveillance studies in these patients.

Outline how Nordic cooperation has added value to this project

This research cannot be conducted without Nordic collaboration and the goldmine of registry data available in these countries. Previous research attempting to address cancer risk after obesity surgery has been under-powered. By merging data from all Nordic countries, we can include >40,000 obesity surgery patients and >160,000 non-operated obese patients. This provides a most powerful basis for the studies outlined. Detailed sub-group analyses will be possible, e.g. assessment of specific types of cancer, and thorough risk assessments in follow-up of time periods after surgery. No previous studies on these topics are close to the statistical power of this project.

List the publications resulting from the NCU research grant

Author(s), title, journal and edition	PMID (8 digits, only if possible)
Tao W, Plecka-Östlund M, Lu Y, Mattsson F, Lagergren J. Causes and risk factors for mortality within 1 year after obesity surgery in a population-based cohort study. Surg Obes Relat Dis 2015;11:399-405.	
Sverdén E, Mattsson F, Sondén A, Leinsköld T, Tao W, Lu Y, Lagergren J. Risk Factors for marginal ulcer after gastric bypass surgery for obesity: A population-based cohort study. Ann Surg. 2015 [Epub ahead of print]	
Maret-Ouda J, Tao W, Mattsson F, Brusselaers N, El-Serag HB, Lagergren J. Esophageal adenocarcinoma after obesity surgery in a population-based cohort study. Surg Obes Relat Dis 2015 [Epub ahead of print]	
Tao W, Konings P, Mattsson F, Hull M, Adami HO, Lagergren J. Colorectal cancer prognosis following obesity surgery in a population-based cohort study. Submitted manuscript.	
Tao W, Holmberg D, Näslund E, Näslund I, Mattsson F, Lagergren J, Ljung R. Validation of obesity surgery data in the Swedish National Patient Registry and Scandinavian Obesity Registry (SOReg). Obes Surg. 2015 [Epub ahead of print]	
Ness-Jensen E, Hveem K, El-Serag H, Lagergren J. Lifestyle intervention in gastroesophageal reflux disease. Clin Gastroenterol Hepatol 2016;14:175-182.	

Brief overview of expenditures for last year 1 vedlegg (NCU financial report 2015_Jesper Lagergren.pdf)

NCU – Financial report for 2015

Report submission date: 10th February 2016

Principal investigator: Jesper Lagergren

Project title: Influence of obesity surgery on cancer risk in a Nordic population-based cohort study

NCU grant received (€): 50,000

Project commencement and completion dates: 1st January 2014 – on-going

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1. Brief overview of expenditures for 2015

The funding of 50,000 € has been used to cover the following costs during year 2015:

Part funding (25% of full-time work) of salary of Wenjing Tao, PhD candidate: 19,225 €.

Part funding (20% of full-time work) of salary of John Maret Ouda, PhD candidate: 10,444 €.

Part funding (15% of full-time work) of salary of Fredrik Mattsson, senior biostatistician: 13,043 €.

Data retrieval costs (some of the cost only): 7,288 Euro.

Sum of expenditures: 50,000 €.