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Open versus minimally invasive emergency esophagectomy and gastrectomy: a nationwide cohort study.

Contactpersoon

Alicia Borggreve, arts-onderzoeker, UMC Utrecht

Aanvragersgroep

AS Borggreve, arts-onderzoeker, UMC Utrecht

Dr. J.P. Ruurda, UMC Utrecht

Prof. Dr. R. van Hillegersberg, UMC Utrecht

Beschrijving onderzoek

Minimally invasive esophagectomy and gastrectomy are increasingly being applied in the surgical treatment of esophageal and gastric cancer, respectively. These techniques could lead to reduced postoperative morbidity and shorter hospital stay. Large nationwide studies already showed that minimally invasive surgery is safe, and potentially beneficial compared to open surgery for elective surgical resections. However, these studies generally exclude emergency surgery. Hence, it remains unknown whether the same applies for esophagectomy and gastrectomy in the acute setting. With the current study proposal we would like to compare postoperative outcomes of minimally invasive esophagectomy and gastrectomy to open esophagectomy and gastrectomy for cancer in the emergency setting.

Statistiek:

Patient characteristics and hospital volume will be compared between patients that underwent a minimally invasive and open procedures in the emergency setting. Depending on the cell count, the χ^2 or Fisher's exact test will be used for categorical variables. The independent samples t-test or Mann-Whitney U test will be used for normally or skewed distributed continuous variables, respectively.

If possible based on the number of patients available, propensity score matching will be performed to minimize the effect of confounding influences of measured covariates on the assessed outcome between the 2 study groups (MI vs open, separate matching for esophageal and gastric cancer). A propensity score for each patient will be calculated using a logistic regression model, which will be fitted for type of surgery using baseline variables. Next, one-to-one matched study groups will be created using nearest-neighbor matching without replacement. Covariate balance of the matched cohort will be assessed using the 2017.1



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mean standardized differences. After propensity score matching, the minimally invasive and the open approach will be compared with regard to the described endpoints.

When propensity score matching will not be possible due to small number of patients in each group, the study will have a descriptive nature and will describe conversion- and postoperative complication rates per surgical approach (MI vs open) to gain insight in the described endpoints.

Statistical analyses will be performed using SPSS version 23.0 (IBM Corp., Armonk, NY) and R 3.3.1 open-source software (<http://www.R-project.org>, “matchit” and “optmatch” packages). A p-value of <0.05 will be considered statistically significant.

Beoogde publicatie

Open versus minimally invasive esophagectomy and gastrectomy for cancer in the emergency setting: a nationwide cohort study.