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Datum

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Titel onderzoek

Clinicopathologic parameters that may predict postoperative pathologic tumour response after NAC in patients with locally advanced chemotherapy.

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Aanvragersgroep

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Beschrijving

Background:

In the Netherlands, about 1200-1500 patients are diagnosed with invasive gastric cancer every year (1). Radical surgery is the cornerstone in the treatment of resectable gastric cancer. However, in only half of the patients with gastric cancer a curative-intent resection is feasible at time of diagnosis. For this group of patients, long-term survival can be further improved by combining surgery with perioperative chemotherapy, as shown by the MAGIC trial (2). Perioperative chemotherapy is considered the standard of care for patients with locally advanced gastric cancer (stage II - III disease) according to Dutch guidelines (3). Of course, potential risks (patients condition and comorbid illnesses) should balance potential benefits.

Down staging of the tumour resulting in improved R0 resection rates (no residual tumour after surgery), and a decreased risk of local tumour recurrence resulting in prolonged overall survival, are considered important benefits of neoadjuvant chemotherapy (NAC). However, postoperative pathological tumour response rates differ between patients. Poor response to NAC is associated with decreased survival (4).

Furthermore, patients who do not respond to NAC are exposed to potential risks associated with NAC, without experiencing the benefits. In addition, (unnecessary) delayed surgery could have serious consequences, with the risk of the tumour growing and becoming unresectable. Therefore it

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is important to identify clinicopathologic and treatment variables that predict pathological tumour response.

Only a few studies have been published regarding this subject, describing tumour differentiation, abnormal a-fetoprotein levels and administration approach to chemotherapy to be associated with pathological tumour response (5-6).

Aim of the study:

To evaluate whether tumor differentiation grade is associated with histopathological response in patients with locally advanced chemotherapy who were treated with NAC. Title research project: Clinicopathologic parameters that may predict postoperative pathologic tumour response after NAC in patients with locally advanced chemotherapy.

Methods and statistics:

All patients with locally advanced gastric cancer who received NAC and underwent a potentially curative resection, registered in the DUCA between 2011-2015, will be included in this study. Patients who did not finish NAC will be excluded. Comparisons between groups will be examined with Chi-square test or Fisher's exact test. Continuous variables will be analyzed using an independent t test or a non-parametric Mann-Whitney- U test. Logistic regression analysis with center as random effect will be used to investigate a possible association between pathologic response (primary endpoint) and tumour differentiation (variable of interest), adjusted for various clinicopathologic parameters (sex, age, ASA score, Carlson score, tumour location). Statistical analyses will be performed in PASW Statistics version 20 (SPSS inc., Chicago, IL, USA) and R 2-14 (The R Project for Statistical Computing and The Comprehensive R Archive Network).

References:

1. Cijfers over Kanker, Netherlands Cancer Institute, www.cijfersoverkanker.nl
2. Cunningham, D. et al. Perioperative chemotherapy versus surgery alone for resectable gastroesophageal cancer. *N Engl J Med* 2006;355:725-730.
3. Oncoline, guideline treatment of gastric cancer, www.oncoline.nl/maagcarcinoom
4. Ott K. et al. Early metabolic response evaluation by fluorine-18 fluroodeoxyglucose positron emission tomography allows in vivo testing of chemosensitivity in gastric cancer: long term results of a prospective study. *Clin Cancer Res* 14, 2012-2018 (2008).
5. Wu ZF et al. Regional arterial infusion chemotherapy improves the pathological response rate for advanced gastric cancer with short-term neoadjuvant chemotherapy. *Sci Rep* 2015 Dec 1;5:17516.
6. Sun LB. et al. Comparison between better and poorly differentiated locally advanced gastric cancer in preoperative chemotherapy: a retrospective, comparative study at a single tertiary care institute. *World Journal of Surgical Oncology* 2014;12:280.

Welke DUCA gegevens worden specifiek opgevraagd:

DUCA 2011-2015.

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Beoogde publicatie(s):

Clinicopathologic parameters that may predict postoperative pathologic tumour response after NAC in patients with locally advanced chemotherapy.