

PROGNOSTIC FACTORS AND TREATMENT OF HEPATOCELLULAR CANCER

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentlig försvaras i hörsal Arvid Carlsson, Medicinareg 3b, Academicum, Göteborg, den 29 mars, klockan 13.00

av Malin Sternby Eilard, legitimerad läkare

Fakultetsopponent:

Norman Kneteman, Professor

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Avhandlingen baseras på följande delarbeten

- I. Sternby Eilard, M, Hagström, H, Mortensen, KE, Wilsgaard, T, Vagnildhaug O M, Dajani, O, Stål, P, Rizell, M. 2018. *Quality of life as a prognostic factor for survival in hepatocellular carcinoma*, Liver International; 38(5): 885-894 doi:10.1111/liv.13593
- II. Sternby Eilard, M, Holmberg, E, Naredi, P, Söderdahl, G, Rizell, M. 2018. *Addition of alfa fetoprotein to traditional criteria for hepatocellular carcinoma improves selection accuracy in liver transplantation*, Scandinavian J Gastroenterology; 53(8):976-983 doi.org/10.1080/00365521.2018.1488180
- III. Sternby Eilard, M, Andersson, M, Naredi, P, Geronymakis, C, Lindnér, P, Cahlin, C, Bennet, W, Rizell, M. *A prospective clinical trial on sorafenib treatment of hepatocellular carcinoma before liver transplantation*. Submitted.
- IV. Sternby Eilard, M, Naredi, P, Helmersson, M, Hemmingsson, O, Isaksson, B, Lindell G, Sandström, P, Strömberg, C, Rizell, M. *Survival outcome after liver transplantation versus resection and ablation for early HCC - a national registry based study*. Submitted.

**SAHLGRENKA AKADEMIN
INSTITUTIONEN FÖR KLINISKA VETENSKAPER**



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Abstract

Hepatocellular carcinoma (HCC) is one of the most common causes of cancer-related death worldwide. Prognosis is related to tumor burden, liver function, and performance status as well as treatment factors. Accurate prognostication is a requisite for optimal treatment decisions. The general aim was to explore specific prognostic factors in different settings of HCC, and to evaluate outcome after treatment with curative intent in patients eligible for multiple treatments.

This thesis is based on four clinical studies in patients with HCC. Study I is a prospective observational study, investigating if patient-reported quality of life (QoL) can predict survival and increase the prognostic accuracy of established staging models. Study II is a review of medical records in a national cohort of patients with liver transplantation from 1996-2014, investigating if AFP levels increase the prognostic accuracy of current selection criteria. Study III is a prospective feasibility study, evaluating neo-adjuvant systemic treatment with sorafenib before liver transplantation. In the fourth study, data from a national registry 2008-2016, was used to assess risk factors and compare outcome in patients eligible for multiple treatments. Overall and recurrence-free survival rates were estimated using Kaplan-Meier and comparisons using log rank tests. Risk factor assessment was performed using Cox Regression analyses.

Results and Conclusions: QoL data was prognostic for survival. Adding QoL data improved the prognostic accuracy of established scoring systems. Pre-transplant AFP was a prognostic factor for survival after liver transplantation for HCC. AFP combined with traditional criteria improved the accuracy of patient selection. Sorafenib treatment before liver transplantation was associated with low tolerability and inadequate tumor control. Survival differences after liver transplantation, resection, or ablation were limited in subgroups with well-preserved liver function and limited tumor burden. Liver function variables predicted survival and should be carefully considered in treatment decisions.

Keywords: hepatocellular carcinoma, liver transplantation, prognostication