

SELECTIVE INTERNAL RADIATION THERAPY IN PATIENTS WITH HEPATOCELLULAR CARCINOMA: A RETROSPECTIVE DANISH STUDY OF EFFICACY

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INTRODUCTION

Selective internal radiation therapy (SIRT) is part of the multimodal treatment of hepatocellular carcinoma (HCC) and was implemented in 2013 at Aarhus University Hospital as the national SIRT Center. This study reports the efficacy of SIRT in patients with unresectable HCC and portal vein thrombosis (PVT).

AIM

The aim of the study was to report the efficacy of SIRT in patients with a unresectable HCC and PVT

METHOD

This retrospective study includes 30 consecutive HCC patients who received SIRT at Aarhus University Hospital between 2013 and 2018. All treatments were performed with ⁹⁰Y resin micro-spheres (SIR-Spheres, Sirtex Medical) and the ⁹⁰Y activity for treatment was calculated using either the so-called body-surface area model or the partition model. Patients were followed from the date of SIRT to progression or death and all adverse events (AEs) were documented from medical records. Tumour response was evaluated according to the modified Response Evaluation Criteria in Solid Tumors (mRECIST) on CT/MR imaging.

RESULTS

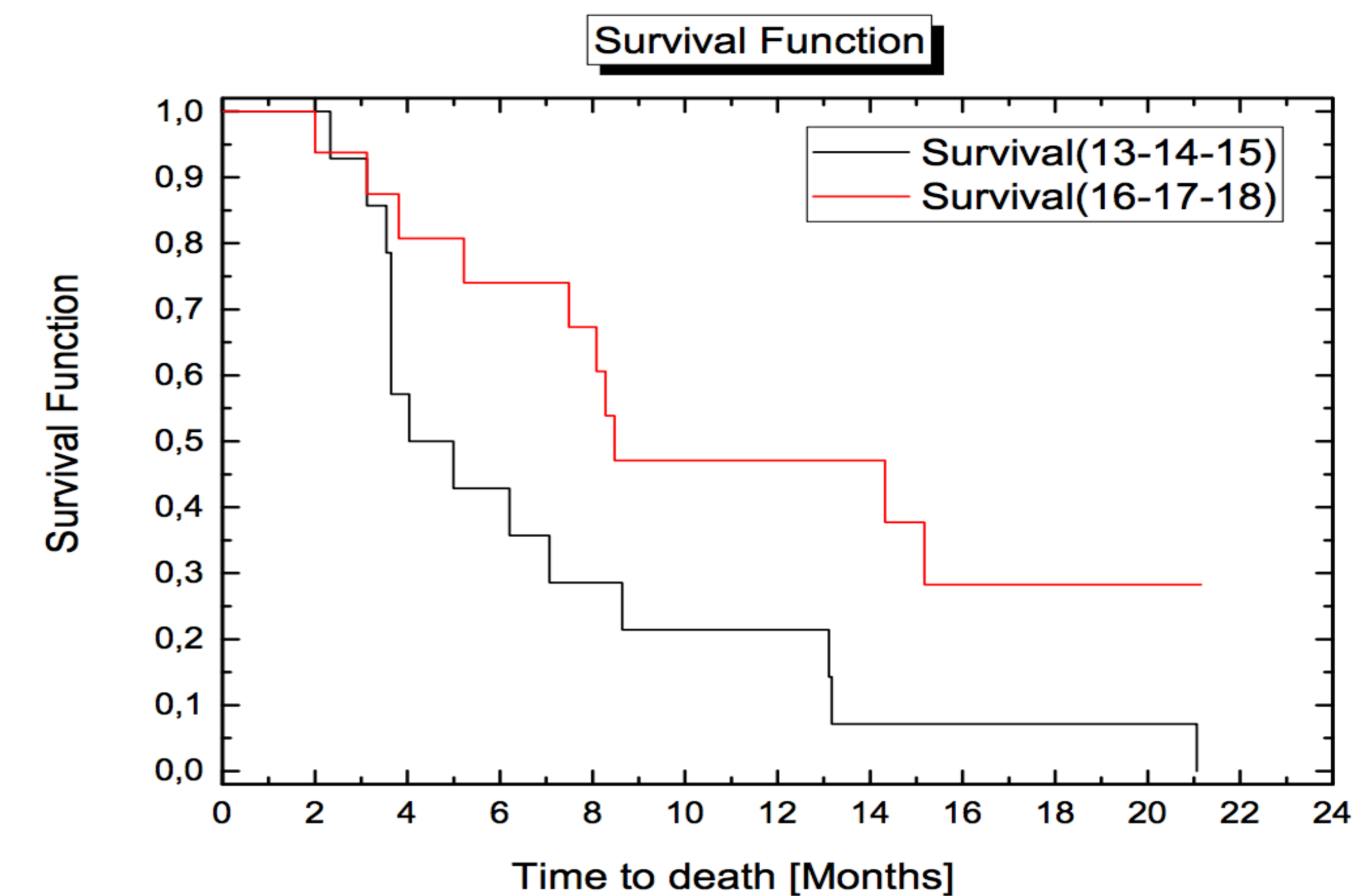
Thirty patients, 29 with PVT, were treated with SIRT and most patients had Child-Pugh A (n=16) or Child-Pugh B (n=5) cirrhosis, and 9 had non-cirrhotic HCC. Twenty-one patients had bilobar multinodular HCC, 21 patients were performance status 0 (PS-0) and 9 were PS-1. We observed similar median overall survival (mOS) in patients with PS-0 and PS-1 (7.5 vs. 8.1 months respectively; p=0.46). We observed improved survival from the first 3-year period (2013-2015) to the following 3-year period (2016-2018) with mOS 4.0 and 8.5 months, respectively (p=0.03). In the latter period the ⁹⁰Y activity was predominantly calculated using the partition model, while in the former period the body-surface area model was mainly applied. Type and frequency of AEs were similar to those reported in the literature, 2 patients (6%) and 3 patients (10%) developed grade 3/4 albumin and bilirubin toxicities, respectively.

CONCLUSIONS

We here report the first Danish evaluation of SIRT treatment in patients with unresectable HCC. We observed a favorable median survival time with improvement over time and minimal toxicity comparable with other studies. The improvement in mOS over time may be explained by better patient selection and increased use of the partition model.

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The Kaplan-Meier plots for patients treated in the years 2013-2015 (14 patients) and 2016-2018 (16 patients) with mOS of 4.0 months and 8.5 months, respectively. The difference in mOS is statistically significant (p=0.03)

