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Pilot Study Of Transarterial Radioembolization With Yttrium-90 In Patients With Hepatocellular Carcinoma

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INTRODUCTION

Transarterial radioembolization with Yttrium-90 (TARE) is applied at the **initial, intermediate and advanced stages** in patients with **hepatocellular carcinoma (HCC)**.

It has **not demonstrated survival advantage over chemoembolization (TACE) or sorafenib** and therefore it lacks a role in clinical guidelines.

AIM

The aim of this study is to assess the **efficacy and safety of TARE** in HCC patients following a strict protocol at our center.

METHOD

Single-center pilot study of consecutive HCC patients treated with TARE between Dec-14 to Sep-19 following these indications:

- HCC **not candidate to sorafenib**
- **Post-progression to sorafenib** not candidate to regorafenib
- **Downstaging for surgical resection**

Clinical, analytical and imaging reviews were made at **month 1, 3 and every 3 months** thereafter.

Clinical characteristics (n=30)	
Male, n (%)	27 (90)
Age, yr median (range)	68.5 (62.75 – 72.25)
Cirrhosis, n (%)	27 (90)
Etiology, n (%)	
- Alcohol	17 (56.6)
- HCV	9 (30)
- Others	1 (13.4)
Child-Pugh, n (%)	
- A5	25 (92.6)
- A6	2 (7.4)
BCLC stage, n (%)	
- A (1<5 / 3<3)	1 (3.3)
- B	9 (30)
- C	20 (66.7)
Vascular invasion, n (%)	
- No	10 (33.3)
- Lobar	7 (23.3)
- Segmental	13 (43.4)
Distribution, n (%)	
- Unilobar	21 (70)
- Bilobar	9 (30)
Nodules	
- Uninodular	22 (73.3)
- Multinodular	8 (26.7)
Diameter (mm): median (IQR)	47.5 (25.25 – 80)
AFP (ng/ml): median (IQR)	13.7 (3.375 – 79.75)
Albumin (mg/dl): median (IQR)	41.5 (39 – 46)
Bilirubin (mg/dl): median (IQR)	0.9 (0.9 – 0.925)
Complications, n (%)	
- No	25 (83.3%)
- Cholecystitis	2 (6.7%)
- Pneumonia	1 (3.3%)
- Hematoma in femoral access	1 (3.3%)
- REILD	1 (3.3%)
Tumor dose (Gy), median (IQR)	212 (141.25 – 350.75)
Activity administered (GBq), median (IQR)	2.45 (1.8125 – 3.4)

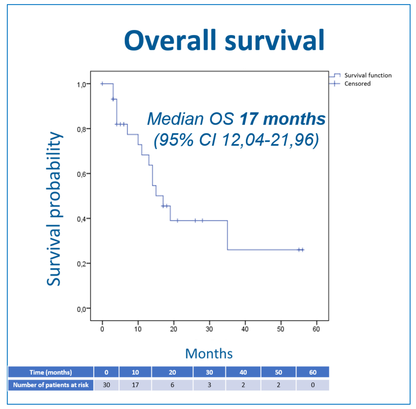
RESULTS

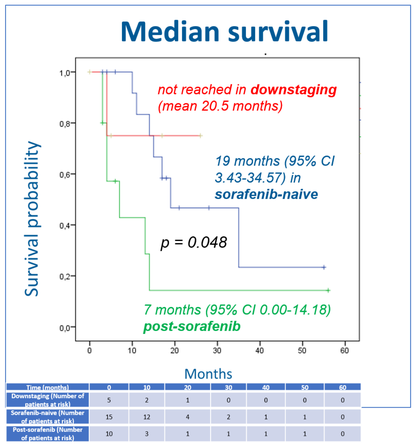
30 patients were recruited: **15 sorafenib-naive, 10 post-sorafenib, 5 downstaging**

Overall survival (OS) was different according to:

- **distribution: unilobar 35 months** (2.310- 67.690) vs **bilobar 11 months** (0.000-22.687), **p=0.013**
- **number of nodules**: single 35 months (6.278-63.722) vs **multiple 13 months** (0.000-31.259), **p=0.021**
- **radiological response at 3rd month (RECIST 1.1): absence of progression 35 months** (9.116-60.884) vs **progression 10 months** (0.000-20.802), **p=0.023**

15 patients have died: Listeria encephalomyelitis (n=1), REILD (n=1), tumor progression (n=13)





CONCLUSIONS

TARE is **safe and effective** in well-selected patients with HCC.

Although applicability is low, those with **uninodular** disease, **unilobar** distribution, **absence of progression at 3rd month** and **sorafenib-naive** reach a median survival of **35 months**.

In addition, in times of **Covid-19** the fact that it is a treatment that does **not require anesthetic support** and that achieves a **good radiological response** could serve as a **bridge therapy** for a few months until **surgery or systemic therapy** outside the peak of the pandemic, since HCC patients are likely to need a longer bridging period.

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