Risk Factors and Characteristics of Hepatocellular Carcinoma Occuring in HVC Cirrhotic Patients after SVR

A Payancé [1], E Clair [1], N Goutte [1, 4], M Bouattour [1], V Paradis [2], MP Vullierme [3], C Castelnau [1], N Boyer [1], O Farges [4], T Asselah [1], F Durand [1], P Bedossa [2], P Marcellin [1], L Castera [1]

Departments of (1) Hepatology, (2) Pathology, (3) Radiology and (4) Surgery, Beaujon Hospital, Assistance Publique-Hôpitaux de Paris, Université Paris-VII, Clichy, France.

BACKGROUND

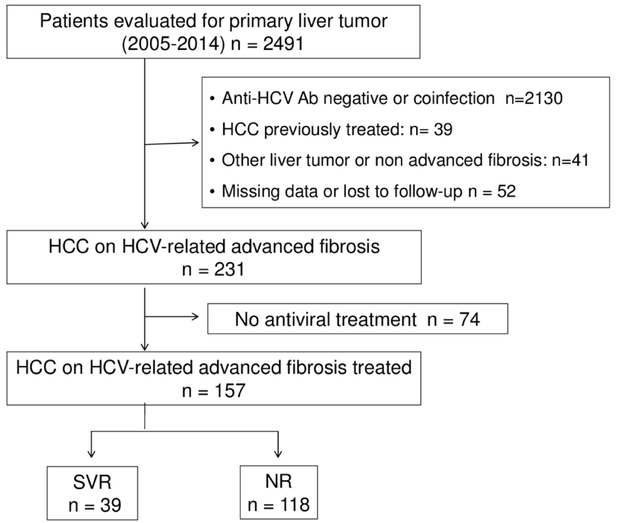
Patients with HCV cirrhosis achieving sustained virological response (SVR) are still at risk of developing hepatocellular carcinoma (HCC). However, risk factors and characteristics of HCC in this context are poorly known.

OBJECTIVES

To identify risk factors and characteristics of HCC after SVR in Western HCV patients with advanced fibrosis.

MATERIALS & METHODS

Figure 1 Flow chart



RESULTS

SVR patients had a mean age at diagnostic of 63 years, were mostly male (87%), from Caucasian ethincity (87%), followed by African (%) and Asian (%). Before any treatment, the majority of patients had compensated cirrhosis, (Child Pugh A 87%) and good performance status (87% PS 0 or 1). As for cofactors, 62% were overweight (BMI > 25 kg/m^2), 51% had hypertension, 36% had type 2 diabetes mellitus and 36% excessive alcohol intake. Following SVR, the median delay for the occurrence of HCC was 51 months (range: 13.3-139.3 months).

Table 1 Comparison of the characteristics of the 39 SVR with the 118 NR patients

Characteristics	SVR patients n = 39	no SVR patients n = 118	p value
Age (yrs)	63 ± 11	61 ± 10	0.187
Male gender (%)	87	74	0.069
Child-Pugh score (A/B-C) (%)	87 / 13	72 / 28	0.05
Body mass Index (kg/m^2)	25.7 ± 3.0	24.8 ± 4.0	0.105
BMI > 25 (%)	62	43	0.098
Alcohol intake > 40 g/d (%)	36	30	0.527
Hypertension (%)	51	30	0.025
Type 2 Diabetes (%)	36	31	0.621
Lab tests			
Total serum bilirubin (µmol/L)	19 ± 19	25 ± 21	0.016
Platelets count > 150 (G/L) (%)	56	18	<0.001
Prothrombin index (%)	84 ± 16.3	76 ± 18	0.013
HCC characteristics			
BCLC (A/B/C) (%)	58 /15/ 27	52 / 29/ 19	0.22
Tumor within Milan criteria (%)	77	68	0.270
HCC treatment			
Curative treatment (%)	54	48	0.549
Liver transplantation	5	3	0.639
Surgical resection	23	11	0.065
Percutaneous treatment	23	34	0.209
TACE	31	35	0.453

Data are expressed as mean (+/- standard deviation) or frequency (%), as appropriate

when compared with NR patients, SVR patients were more likely to be overweight (62% vs. 43%, respectively; p=0.098), to have hypertension (51 vs. 30%, p=0.025), higher prothrombin index (84 vs. 76%, p=0.013), platelet counts higher than 150 G/L (56% vs 18%, p<0.001), lower bilirubin level (19 vs. 25 µmol/L, p=0.016) and lower serum alpha-foetoprotein levels (802 vs. 6919 ng/ml, p=0.024). Conversely they did not differ for most HCC characteristics (number and size of nodule, BCLC staging, Milan criteria, portal obstruction) and percentage of curative treatment.

Table 2 Multivariate analysis of risk factors for HCC in SVR patients

	OR	[IC 95%]	p
Male gender	3.26	[0.84 - 12.72]	0.08
Age	1.02	[0.97 - 1.08]	0.36
Body mass index	1.15	[1.01 - 1.33]	0.04
Body mass index > 25	3.23	[1.21 – 8.64]	0.01
Hypertension	1.35	[0.51 - 3.58]	0.54
Platelets count > 150	5.11	[1.63 - 16.0]	0.004
Total serum bilirubin	0.80	[0.35 - 1.81]	0.59
Prothrombin index	0.99	[0.96 - 1.02]	0.76
Alpha-fetoprotein	0,87	[0.69 - 1.10]	0,24
Number of nodules	0,78	[0.46 - 1.31]	0,34

In multivariate analysis, only overweight (BMI>25 kg/m2) (OR 3.23, 95% CI [1.21-8.64], p=0.01) and platelet count > 150 G/L (OR 5.11, 95% CI [1.63-16], p=0.004) were independent risk factors for HCC.

CONCLUSIONS

Our results suggest that HCC may develop in HCV cirrhotic patients until 10 years after SVR and may be associated with comorbidities such as obesity.

These findings emphasize the need for prolonged HCC screening after SVR and control of comorbidities.

References / Abbreviations

Ikeda et al. J Gastroenterol 2005; 40: 148-56.
Hirakawa et al. Intern Med 2008; 47: 1637-43.
Nagaoki et al. J Gastroenterol 2011;46: 799-808.
Ogawa et al. J Hepatol 2013; 58: 495-501.
Sato et al. Intern Med 2013; 52: 2701-6.
Aleman et al. Clin Infect Dis 2013; 57: 230-6.
Li & Chung Cancer 2015; 121: 2874-8.
D'Ambrosio & Colombo Liver Int 2016 ; in press

Abbreviations:
BCLC Barcelona Clinic Liver Cancer staging; HCC hepatocellular carcinoma; SVR sustained virological response; TACE trans arterial chemoembolization; NR non responders

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