



# Impact of metabolic syndrome and non-alcoholic fatty liver disease in outcomes and tolerance after percutaneous multibipolar radiofrequency for early hepatocellular carcinoma

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## INTRODUCTION AND AIM

**1** Long-term outcomes after percutaneous radiofrequency ablation (RFA) for early hepatocellular carcinoma (HCC) in patients with non-alcoholic fatty liver disease (NAFLD) have been poorly studied. We aim to describe the outcomes after multibipolar RFA in these patients and the prognostic impact of metabolic syndrome among other etiologies.

## PATIENTS AND METHODS

**2** Patients who underwent multibipolar RFA as first treatment for HCC within Milan criteria in 4 tertiary centers in France (2008-2018) were enrolled in a retrospective study. Patients with pure NAFLD-HCC were compared to those with alcoholic liver disease (ALD), hepatitis B (HBV) and hepatitis C virus (HCV). The association between pure NAFLD or between metabolic syndrome in other etiologies and adverse events and survival were assessed using Kaplan-Meier method, the log-rank test and uni/multivariate analysis using the Cox model.

## CONCLUSIONS

**4** Patients with pure NAFLD or with both viral infection or alcoholic liver disease and metabolic syndrome have a prolonged overall survival after multibipolar RFA for HCC without increased morbidity or tumor recurrence compared to patients without metabolic syndrome suggesting that percutaneous ablation is an efficient treatment in this population.

## REFERENCES

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## RESULTS

520 patients were enrolled including 82% of male with a median age of 66 years. 494 patients (95%) had cirrhosis, 81% had a unique nodule with a median size of 25 mm. 390 patients (75%) had at least one component of metabolic syndrome including obesity in 155 patients. Sixty-two patients (12.6%) had pure NAFLD, 225 (45.5%) had ALD, 36 (7.3%) had HBV and 171 (34.6%) had HCV. Patients with pure NAFLD were significantly older (median age 72.6 years,  $p < 0.0001$ ), more often obese (median BMI 30.3 kg/m<sup>2</sup>,  $p < 0.0001$ ), had more components of metabolic syndrome, had more ischemic heart disease (17.7%,  $p = 0.017$ ) and more esophageal varices (39,3%,  $p = 0.004$ ) than patients with other etiologies.

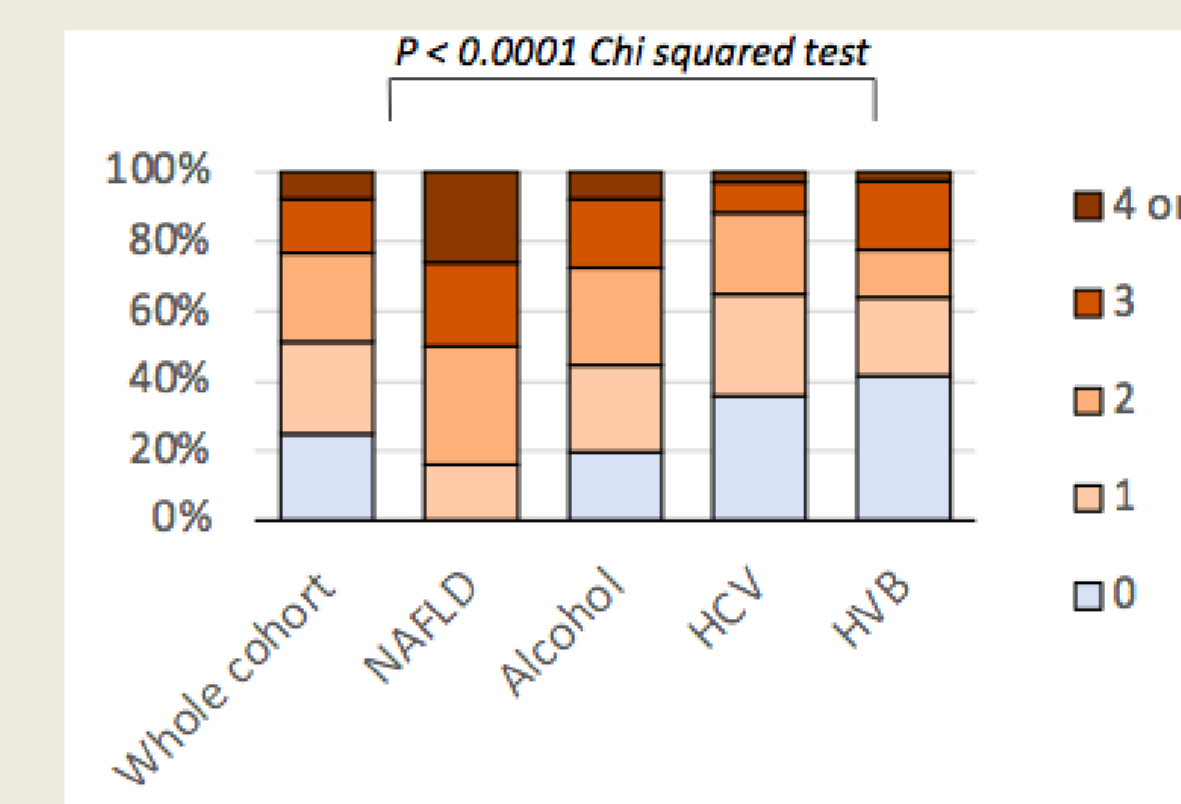


Figure 1. Number of components of metabolic syndrome among the different etiologies

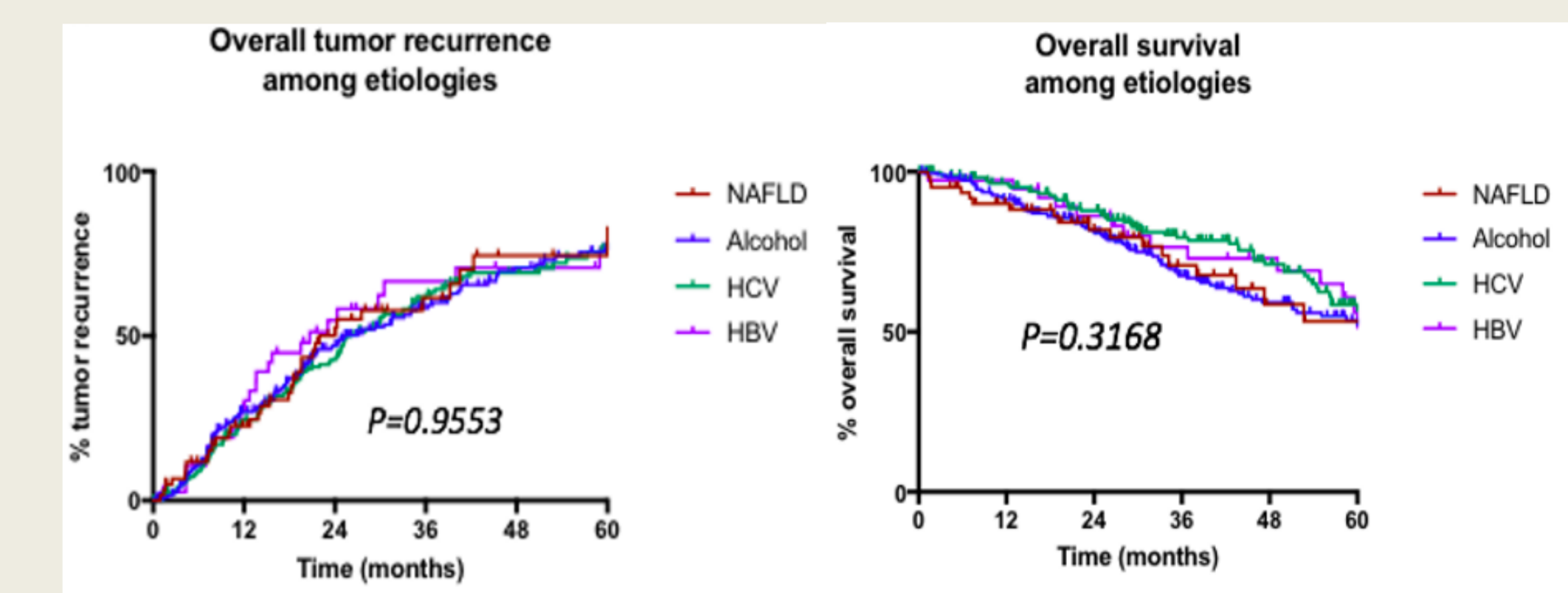


Figure 2. Overall tumor recurrence and overall survival according to the etiologies

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In the whole series, median overall survival (OS) was 66.5 months with a 1-, 3- and 5-years OS of 94%, 74% and 56%, respectively. In pure NAFLD patients, median, 1-, 3- and 5-years OS were 79 months, 90%, 71% et 59%, respectively. There were no differences in morbidity, tumor recurrence and overall survival in patients with pure NAFLD versus other etiologies. In patients with HBV, HCV or ALD, there was no prognostic impact of metabolic components on treatment-related adverse events, the number of sessions to achieve complete ablation and oncological outcomes of RFA for HCC.

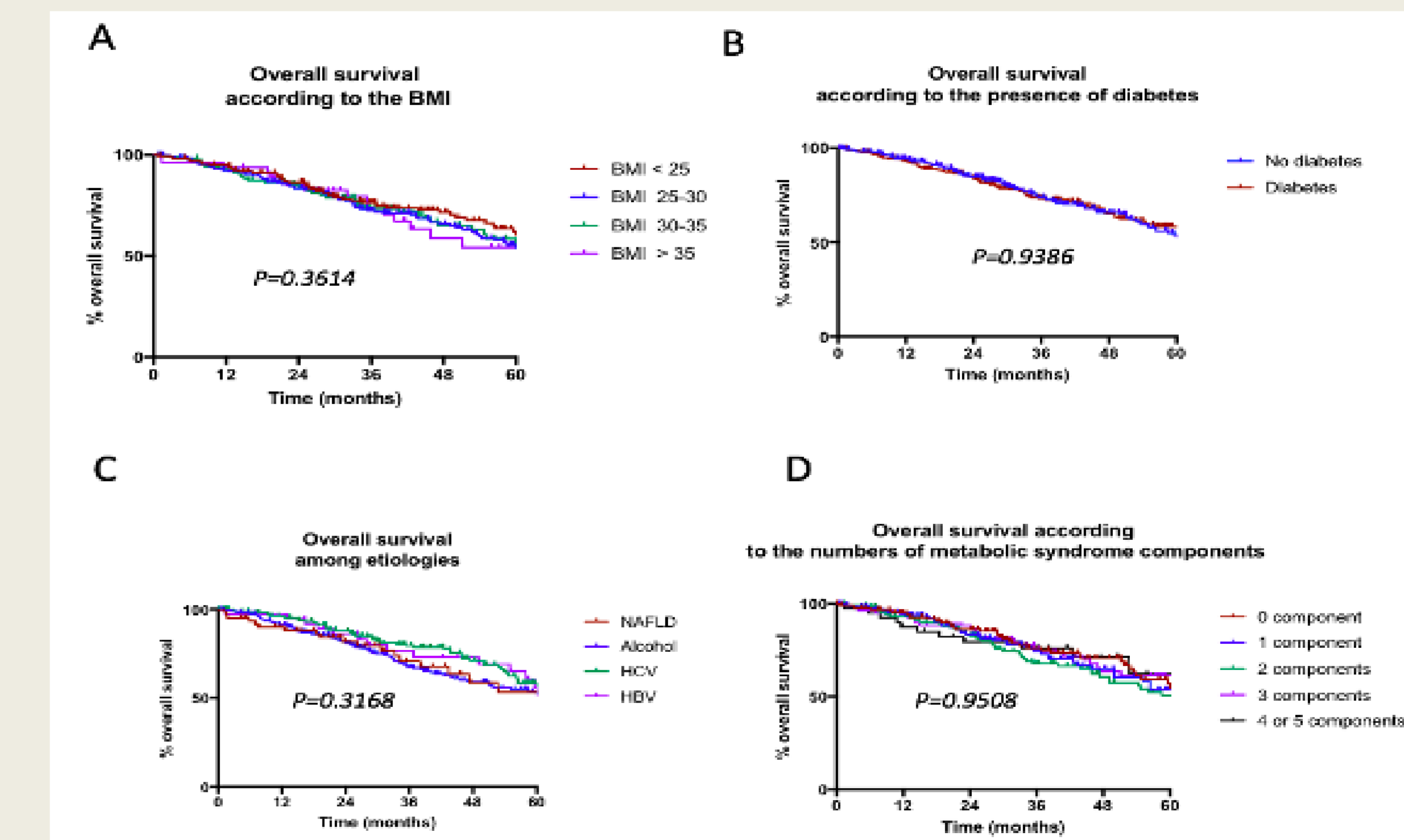


Figure 3. Overall survival according to the etiologies and presence of metabolic syndrome: Overall survival according to BMI (A), to the presence of diabetes mellitus (B), to the etiologies (C) and to the number of metabolic components (D)