



CAN ALPHA FETO PROTEIN LEVEL BE USED AS A PROGNOSTIC INDICATOR IN PATIENTS WITH CIRRHOSIS AND HEPATOCELLULAR CARCINOMA?

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Introduction

- Current guidelines recommend staging Hepatocellular Carcinoma (HCC) using the Barcelona-Clinic-Liver Cancer (BCLC) Classification. This staging system uses a set of criteria to stratify patients to guide their management.
- Albumin-Bilirubin (ALBI) score and alfa-fetoprotein (AFP) levels were recently added to the BCLC classification.
- Tumor size is one of the main prognostic factors associated with all-cause mortality and recurrence after treatment. Tumor size ≤ 3 cm is a vital cutoff to define treatment and > 5 years survival.
- The aim of this study is to determine the correlation between the AFP levels and tumor size at diagnosis in patients with HCC and their prognosis.

Methods and Materials

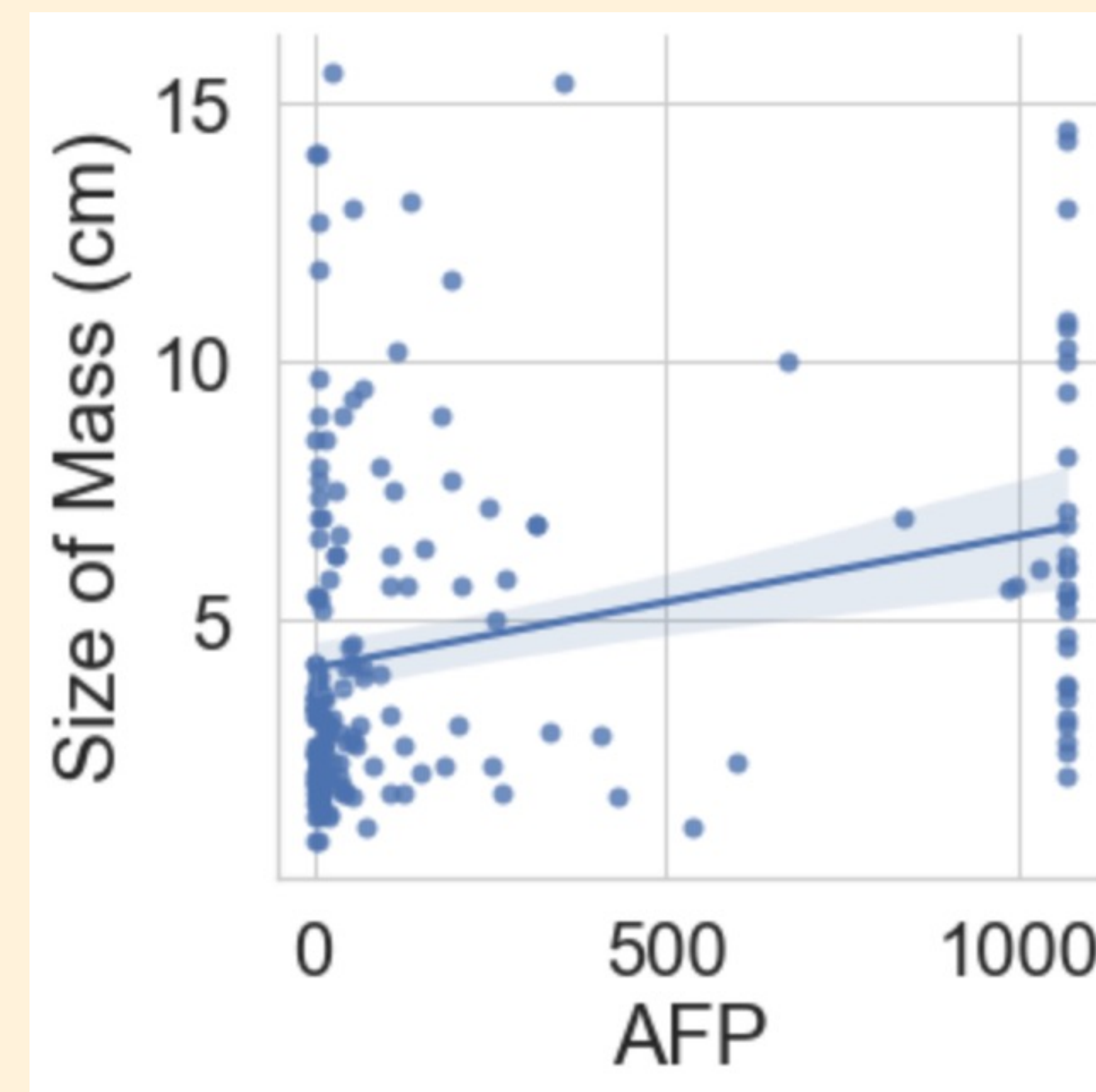
- A retrospective study was performed for all patients diagnosed with HCC at Liver Associates of Texas, P.A., between January 2014 to October 2021.
- All patients underwent laboratory testing, including AFP levels, at the time of diagnosis.
- The size of the mass was determined at the time of diagnosis using imaging testing such as dynamic abdominal CT/MRI Scan.
- A linear regression model was used to assess the correlation between levels of AFP and tumor size at diagnosis in patients with HCC.
- A value of $p < 0.05$ was considered statistically significant.

	coef	std err	t	P> t	[0.025	0.975]
Const	4.0895	0.271	15.096	0.000	3.555	4.624
AFP	0.0025	0.001	4.217	0.000	0.001	0.004

Table 1. Regression Metrics

Results

- 231 patients were identified with HCC, of which 191 patients had information for tumor size in cm and AFP level at the time of diagnosis.
- AFP level at the time of diagnosis was found to have a statically significant ($p = 0.001$) positive correlation of 0.0025 (95% CI: 0.001 to 0.004).



Graph 1. AFP is correlated with tumor size. AFP levels were positively correlated with size of mass in patients with HCC.

Discussion

- Patients with tumor size < 3 cm had an average AFP level of 111.53 (SD = 246.05), and patients with tumor size > 3 cm had an average AFP level of 323.60 (SD = 443.94).
- The positive correlation between AFP with tumor size at diagnosis suggests its potential as a prognostic tool for patients with HCC. Given that tumor size above 3cm reduces survival, further studies are necessary to validate these results and determine the clinical relevance of AFP as a prognostic factor.
- In conclusion, in patients with HCC, the AFP level at the time of diagnosis was found to have a significant correlation with an increased tumor size, subsequently reducing the patient's survival.

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References

1. Reig M, Forner A, Rimola J, Ferrer-Fàbrega J, Burrel M, Garcia-Criado Á, et al. BCLC strategy for prognosis prediction and treatment recommendation: The 2022 update. J Hepatol [Internet]. 2022 [cited 2022 Sep 13];76(3):681–93. Available from: [https://www.journal-of-hepatology.eu/article/S0168-8278\(21\)02223-6/fulltext](https://www.journal-of-hepatology.eu/article/S0168-8278(21)02223-6/fulltext)
2. Forner A, Reig M, Bruix J. Hepatocellular carcinoma. Lancet. 2018 Mar 31;391(10127):1301-1314. doi: 10.1016/S0140-6736(18)30010-2. Epub 2018 Jan 5. PMID: 29307467.