European **Rev**iew for **Med**ical and **Pharmacol**ogical **Sci**ences 2013; 17: 2411-2412

Letter to the Editor

Serum alpha-fetoprotein in patients with nonalcoholic fatty liver disease

Dear Editor,

We read with interest the Kara et al[1], article showing similar serum alpha-fetoprotein (AFP) levels among men with nonalcoholic simple steatosis (SS), steatohepatitis and controls of lower body mass index (BMI), and no discriminating value for NASH[1]. Following this publication, we performed a *post-hoc* analysis in a Greek cohort (30 [22 women] patients with biopsy-proven nonalcoholic fatty liver disease [NAFLD] and 24 [20 women] age-, waist circumference- and BMI-matched controls), whose characteristics were described previously[2]. We also found similar serum AFP levels (immunochemiluminescence; ADVIA Centaur XP; Siemens Helthcare Diagnostics; Deerfield, IL, USA) in patients with NASH (n = 15; 4.0 ± 0.8 ng/ml), SS (n = 15; 4.0 ± 0.5 ng/ml) and controls (3.3 ± 0.3 ng/ml; $p = 0.567$). AFP was also similar in different histological lesions (Table I). AFP was not correlated with any anthropometric, clinical or biochemical parameter, including liver function tests, serum lipids, insulin resistance and adipocytokines (adiponectin, leptin, visfatin, resistin, tumor necrosis factor-α, interleukin-6). Remarkably, during a follow up of 3.8 ± 0.1 years (routinely every 6 months), none of NAFLD patients developed hepatocellular carcinoma (HCC).

Other data regarding serum AFP in NAFLD patients are limited. Wójtowicz-Chomicz et al. showed similar AFP levels between NAFLD patients and controls, whereas lower in NAFLD than other liver diseases[3]. On the contrary, Babali et al. showed higher AFP levels in NAFLD patients than controls (of lower BMI)[4]; AFP also increased by increasing steatosis grade; however, in this study, NAFLD was ultrasound- and not biopsy-proven and AFP had high variability in NAFLD patients[4].

Table I. Comparative data of serum alpha-fetoprotein (AFP) levels within specific histological lesions of patients with nonalcoholic fatty liver disease (NAFLD).

		NAFLD patients (N)	AFP (ng/ml)
Steatosis (*p*-value)*			0.327
	≤ 33%	19	4.4 ± 0.7
	> 33%	11	3.4 ± 0.5
Fibrosis (*p*-value)*			0.387
	Absent	10	4.5 ± 0.7
	Present	20	3.7 ± 0.6
Lobular inflammation (*p*-value)*			0.255
	Absent	19	4.4 ± 0.7
	Present	11	3.3 ± 0.5
Portal inflammation (*p*-value)*			0.651
	Absent	18	3.8 ± 0.5
	Present	12	4.3 ± 1.0
Ballooning (*p*-value)*			0.265
	Absent	6	3.1 ± 0.9
	Present	24	4.2 ± 0.6

Data are presented as mean ± standard error of the mean (SEM) or numbers
*: Between group comparisons (Mann-Whitney test)

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In conclusion, the routine measurement of mammalian embryo-specific and tumor-associated (oncofetal) AFP in NAFLD patients does not seem to assist in noninvasive NASH diagnosis. However, its diagnostic value and cost-effectiveness in cirrhotic or high-risk NASH patients remain to be elucidated; this may be of importance, given that HCC may arise in NASH even in the absence of cirrhosis[5].

Conflict of Interest

The Authors declare that there are no conflict of interests.

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