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NAFLD-HCC Is Associated with Female Sex and Lower Rates of Advanced Fibrosis in a Prospective Cohort of HCC Patients

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Abstract Text

Background: There is conflicting data and a lack of prospective populational data studying the epidemiology and natural history of hepatocellular carcinoma associated with non-alcoholic fatty liver disease (NAFLD-HCC). We aimed to assess the natural history and epidemiology of all patients with NAFLD-HCC in Geneva, Switzerland diagnosed between 2011-14.

Methods: All HCC cases resident in the canton of Geneva, Switzerland diagnosed between 2011-14 were extracted from the Geneva cancer registry. The Geneva cancer registry is one of the oldest cancer registry in Europe and prospectively collects extensive data on all patients with cancer in Geneva. Clinical information was retrospectively collected from the cancer registry documents or Geneva University Hospital database. NAFLD-HCC was diagnosed when specifically stated or when other causes of liver disease were excluded.

Results: 181 patients were diagnosed with HCC in the canton of Geneva between 2011-14. Major etiologies of underlying liver disease were alcohol (57%), HCV (29%), NAFLD (19%), HBV (15%), median follow-up was 19 months (IQR 4-48 months), 69% died during follow-up. The 34 NAFLD-HCC subjects were significantly older, more commonly female, had higher rates of obesity, arterial hypertension and diabetes compared to non-NAFLD-HCC subjects (**Table 1**). NAFLD-HCC subjects had less stage F3-F4 fibrosis and were non-significantly less likely to have undergone HCC screening in the 12 months prior to the HCC diagnosis (9% vs 28%, p=0.063). NAFLD-HCC subjects had similar tumor stage compared to non-NAFLD subjects and similar survival after diagnosis of HCC (HR = 0.72, 95%CI 0.45-1.2, p=0.18).

Conclusion: In a prospective cohort of HCC subjects diagnosed over 4 years, NAFLD-HCC subjects accounted for 19% of all HCCs. NAFLD-HCC patients were older, more comorbid and more commonly female. Only 9% of NAFLD-HCC subjects had HCC screening prior to diagnosis possibly because over half of subjects had no advanced fibrosis. This prospective populational study underlines the specific clinical characteristics of NAFLD-HCC which must guide future recommendations and research.

Variable	All patients	Non-NAFLD	NAFLD	p-value (NAFLD vs non-NAFLD)
Age at HCC diagnosis	67.7 (58.8-75.5)	66.8 (58.4-74.1)	74.4 (67.1-82.1)	0.003
Female sex	42 (23%)	26 (18%)	16 (47%)	0.001
Obesity	37 (24%)	25 (19%)	12 (43%)	0.013
Diabetes	61 (36%)	42 (31%)	19 (58%)	0.005
Cirrhosis	94 (71%)	85 (80%)	9 (35%)	<0.001
Advanced fibrosis (F3/F4)	103 (78%)	91 (86%)	12 (46%)	<0.001
TNM stage 3 or 4	65 (40%)	53 (41%)	12 (40%)	1.0

Table 1: Characteristics of patients. P-value, Wilcoxon test or Fisher's Exact test.

Disclosures

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