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Alcohol and coffee drinking and smoking habit among subjects with HCV infection

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ABSTRACT

Background/aims: The aims were to estimate among patients with hepatitis C virus (HCV) infection the prevalence of alcohol and coffee intake and smoking habit, the reliability of these self-reported data and the possible change of patients' habit after their first contact with a Viral Hepatitis Service.
Methods: 229 patients were initially interviewed personally at the Viral Hepatitis Service and after 6 months they were re-interviewed by phone in regard to their alcohol, coffee drinking and smoking habits.
Results: Alcohol drinkers were 55.5% of males and 35.3% of females. Most subjects drank coffee daily, both men (90.0%) and women (84.9%). The proportion of current smokers was higher in males (43.6%) than females (26.9%). We found a fair to good reliability of self-reported data regarding patients' habits, alcohol and coffee intake, and number of cigarettes smoked daily.

We observed a statistically significant decrease in alcohol and coffee intake and cigarettes smoked between baseline and follow-up interviews.
Conclusion: We found a fairly high proportion of HCV-infected patients who regularly drink alcohol and coffee beverages and smoke cigarettes, especially among males. The reliability of self-reported data on these habits seems satisfactory. More decisive action to modify these habits, especially alcohol intake, is required in these patients.

1. Introduction

Some common lifestyle habits can influence the development of liver disease. Alcohol drinking is a well-known cause of chronic liver disease [1–3] and a dose–effect relationship between alcohol intake and the risk of developing a clinically evident liver disease is reported. Tobacco smoking is a biologically plausible risk factor for liver cancer, especially among people with other risk factors for chronic liver disease, and some findings support this hypothesis [4]. On the other hand, coffee drinking may play a protective role on the liver, since an inverse relation between coffee drinking and cirrhosis or hepatocellular carcinoma (HCC) has been found in some studies [5–7].

Many subjects with hepatitis C virus (HCV) infection have a progression of chronic hepatitis C towards cirrhosis and HCC. Various viral and host factors can influence the progression of the hepatic disease [8], among them, the effect of alcohol drinking on progression of HCV-related disease has been investigated widely [9,10]. An interaction between alcohol intake and HCV infection in causing cirrhosis and HCC has been found [3,11,12]. Furthermore, alcohol drinking can influence the response to HCV treatment [13]. Also a possible effect of tobacco smoking in increasing, and of coffee drinking in decreasing, the risk of the progression of liver damage towards cirrhosis have been shown in some studies [5,14,15].

In spite of the role that alcohol and coffee drinking and smoking habits may play in the development of chronic liver disease due to HCV infection, few studies are available on the epidemiologic pattern of these habits in HCV-infected individuals [16]. Furthermore, as data on lifestyle habits are usually collected through interviews, their reliability is questionable, but as far as we know these behaviours have not been investigated among patients with HCV infection outside the hospital setting.

The aims of this study were to investigate among patients with HCV infection: (a) the prevalence of alcohol and coffee intake and smoking habit, (b) the reliability of self-reported data on these habits and (c) the possible change of patients' habits between before and after their first contact with a Viral Hepatitis Service.

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2. Methods

2.1. Study design

All subjects were outpatients admitted for the first time due to anti-HCV positivity to the Viral Hepatitis Service of the Infectious Diseases Department of the "Spedali Civili" Hospital in Brescia, North Italy, between March 2006 and December 2007. They underwent two interviews using the same questionnaire: the first was performed at the first contact with the Viral Hepatitis Service and the second on average 6 months later (range 5–12 months). First, all participants were interviewed face-to-face during their visit by a trained interviewer, and they were told they would be recalled after 6 months. In accordance with international guidelines [17], physicians advised patients to abstain totally from drinking alcohol and to stop smoking. Patients who also had a serious disease, particularly a cardiovascular disorder, were advised to moderate their coffee consumption as well.

Each subject was required to sign an informed consent form prior to participation. The study was approved by the Ethics Committee of the "Spedali Civili" Hospital. The data were analysed anonymously, in accordance with Italian privacy laws concerning the use of personal health data for research purposes.

The 2nd interview was conducted, using the same questionnaire, over the telephone by an interviewer who was unaware of the answers given by each individual at the 1st interview. The subjects were asked about: (a) their habits, at the time of the 1st interview, so as to evaluate the reliability of self-report data, and (b) their habits, at the time of the 2nd interview, so as to detect any changes that had occurred in the interval between the two interviews. Each interview lasted an average of 10 min.

2.2. Population

All subjects were outpatients who went to the Viral Hepatitis Service of the Infectious Disease Department for the first time, following their GP's suggestions, because of anti-HCV positivity. The patients had not received any antiviral treatment before the visit. Among them, 47.2% started antiviral treatment after the visit. They had been referred by their general practitioners because they were either discovered to have an HCV infection or found to have an increase in transaminases or other signs or symptoms suggesting progression of liver disease. Subjects were enrolled according to the following inclusion criteria: born in Italy, aged between 18 and 65 years; not having HCC, other neoplasms, severe systemic diseases such as chronic heart failure, stroke, respiratory insufficiency and chronic renal failure, or severe physical or mental handicaps. Subjects who claimed intravenous drug use were also excluded.

2.3. Questionnaire and interview

The questionnaire used to collect information on alcohol and coffee consumption and smoking habit was based on one that some authors used in previous case–control studies on cancer aetiology in this area, after having tested its reliability [11,18].

Alcohol consumption was assessed by asking about the frequency and amount of alcohol consumed in a typical day or week. We considered current drinkers patients who claimed to drink alcoholic beverages at least weekly. We evaluated the total amount of alcohol intake by summing up the number of glasses of wine, cans of beer, shots of aperitif, spirits and coffee with spirits taking account of their mean alcohol content. In accordance with international guidelines, we used different categories of alcohol intake among males and females, with thresholds of 40 and 30 g/day in males and females, respectively, to separate low-moderate from medium-high intake. Accordingly, we dichotomised current drinkers into subjects with either "low" (1–40 and 1–30 g/day in men and women, respectively) or "high" (>40 and >30 g/day) alcohol consumption.

Coffee intake was assessed by summing up the cups of coffee, cappuccino and "coffee and milk" drunk in a typical day. We considered coffee drinkers patients who drank at least one cup of coffee per day.

Information on tobacco smoking was also collected. Subjects were classified as current smokers if they smoked at least one cigarette per day.

Information provided by patients on their current alcohol and coffee consumption and tobacco smoking at the first contact with the Viral Hepatitis Service was referred to as "before" the first contact; those concerning patients' current habits at the time of the 2nd interview were referred to as "6–12 months after" the first contact with the Viral Hepatitis Service.

To evaluate if they decreased their consumption we asked them about their habits 10 years before, and if they had changed them. If they answered positively we asked the reason for this change. In this way we could evaluate if their GP had given them advice concerning their lifestyle.

2.4. Statistical methods

In order to assess reliability, we compared the answers provided by each patient at the 1st interview and those provided at the 2nd interview regarding his or her habits 6–12 months earlier, at the time of the first contact with the Viral Hepatitis Service.

Agreement between the two interviews was assessed by computing Cohen's kappa statistic (K) for dichotomous variables, and the intra-class correlation coefficient (ICC) and Spearman's rho for ordinal or continuous variables, respectively [19,20]. The ICC was computed using a two-way analysis of variance (ANOVA) with fixed effects [19]. The strength of agreement was evaluated for each of these statistics according to Altman's suggestions for interpreting K values [21]: poor <0.20, fair 0.21–0.40, moderate 0.41–0.60, good 0.61–0.80 and very good 0.81–1.00. Low K values were not automatically regarded as indicative of non-agreement, however, since this statistic is strongly dependent on true prevalence [22] and may be low when agreement is high due to unbalanced, symmetrical marginals [23].

At the 2nd stage, we assessed the changes that had occurred in each patient's current habits in the 6-month interval between the 1st and the 2nd interview (before and 6–12 months after the first contact with the Viral Hepatitis Service). To this end we compared each patient's answers regarding his or her current habits at the time of each interview, using common statistical tests for the comparison of two proportions or means.

The study was designed to enroll at least 100 men and 100 women in order to achieve a reliability of 0.5 using the ICC for ordinal variables (alcohol and coffee intake and number of cigarettes smoked per day) assuming a type I error of 5%, a power of 80% and a minimally acceptable level of reliability of 0.3, for each gender separately, using the formula suggested by Walter et al. [24]. The sample size was also large enough to detect a 10 mg/day reduction of alcohol intake in current alcohol drinkers among men, from before to after the first contact with the Viral Hepatitis Service (means of alcohol intake: from 30 to 20 mg/day), given a standard deviation of 30 mg/day, using a Student's t-test for paired data (alpha = 0.05; power = 90%). Since we expected to lose up to 30% of the patients initially recruited, we enrolled 300 subjects in the study, 50% of whom males.

The statistical analyses were performed using STATA software (Stata Statistical Software release 8.0, 2003; Stata Corporation, College Station, TX).