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Patterns of alcohol consumption and health-related quality of life in older adults

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ABSTRACT

Background: Health-related quality of life (HRQOL) is a more powerful predictor of health services use and mortality than many objective measures of health. However, in older adults the association between main alcohol drinking patterns and HRQOL is uncertain.
Methods: A prospective cohort with 2163 community-dwelling individuals aged ≥60 years was recruited in Spain in 2008-2010 and followed-up through 2012. At baseline, participants reported alcohol consumption. HRQOL was measured with the SF-12 questionnaire, at baseline and in 2012.
Results: In cross-sectional analyses at baseline, compared to non-drinkers, better scores on the physical component summary (PCS) of the SF-12 were reported in moderate (β = 1.59 [95% confidence interval 0.61–2.58]) and heavy drinkers (β = 2.18 [0.57–3.79]). Better scores on the PCS were also reported by drinkers who adhered to the Mediterranean drinking pattern (MDP) (β = 1.43 [0.30–2.56]) as well as those who did not (β = 1.89 [0.79 –2.99]). However, no association was observed between average alcohol consumption or the MDP and the mental component summary (MCS) of the SF-12; or between beverage preference or drinking with meals and either the PCS or MCS scores. In prospective analyses, women who reportedly drank exclusively with meals showed better scores on the PCS than women who drank only outside of meals (β = 3.64 [0.79–6.50]).
Conclusions: The small association between alcohol consumption and better physical HRQOL found at baseline was not apparent after a few years of follow-up. Medical advice on alcohol consumption cannot be grounded on its effects on HRQOL.

1. Introduction

As a consequence of population ageing, the number of people aged 60 or over will nearly triple between 2013 and 2050, increasing from 12% to 21% of the total population (from 23% to 32% in developed countries; United Nations, 2013). Although alcohol intake seems to decline with age, a significant number of older people drink alcoholic beverages (Crome et al., 2011; León-Muñoz et al., 2015). Alcohol consumption has many harmful health effects, and is one of the main causes of burden of disease (Lim et al., 2012). However, it may also have beneficial effects when consumed in small, regular amounts. Data from observational studies show that low-to-moderate alcohol consumption is associated with a reduced risk of cardiovascular disease (CVD), diabetes, frailty, and all-cause death among middle-aged and older adults (Gea et al., 2014; Mukamal et al., 2006; Ortolá et al., 2015; Ronksley et al., 2011).

Health-related quality of life (HRQOL) is a multidimensional subjective evaluation of positive and negative aspects of life that affect health. Thus, the concept of HRQOL broadens the traditional assessment of health, in terms of morbidity or mortality, by including domains of physical, mental and social wellbeing (Centers for Disease Control and Prevention, 2015). Therefore, HRQOL is an important tool, particularly among older adults, since traditional health outcomes do not account for the perceived functional limitations that occur later in life (Centers for Disease Control and

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Prevention, 2015). Moreover, HRQOL is a more powerful predictor of health services use and mortality than many objective measures of health (Dominick et al., 2002; Otero-Rodríguez et al., 2010; Rodríguez-Artalejo et al., 2005).

A number of studies have reported a relationship between alcohol consumption and HRQOL in a variety of samples, including alcoholics (Barros da Silva Lima et al., 2005; Donovan et al., 2005; Ginieri-Coccossis et al., 2007), primary care patients (Volk et al., 1997) and the general population (Kaplan et al., 2012; Kim and Kim, 2015; Martinez et al., 2014; Mathiesen et al., 2012; Paul et al., 2011; Pisinger et al., 2009; Riise et al., 2003; Saarni et al., 2008; Valencia-Martín et al., 2013; Van Dijk et al., 2004) in multiple countries, but results have been inconsistent. Differences in patterns of alcohol consumption across populations may account for the heterogeneity of these findings; specifically, in addition to average alcohol intake, the type of alcoholic beverage, as well as the context of drinking, may influence health outcomes. Also, most of the studies evaluating the association between alcohol consumption and HRQOL have had a cross-sectional design, which limits causal inference, and the few longitudinal studies conducted have followed mostly alcoholics receiving treatment, precluding extrapolation to the general population. Most importantly, there is little information on the relationship between alcohol consumption and HRQOL in older adults. To our knowledge, only two studies have evaluated this association in individuals aged 50 and above, with inconsistent results (Kaplan et al., 2012; Martinez et al., 2014). The first of these studies (Kaplan et al., 2012), with a prospective design, found a lower reduction in HRQOL over time among moderate drinkers compared to lifetime abstainers and infrequent drinkers. The second (Martinez et al., 2014), a cross-sectional study based on 3666 participants in South Africa, failed to find any association. Furthermore, these studies did not investigate beverage preferences or the context of drinking, and were conducted in countries where drinking patterns in older adults are traditionally different from those of Southern European countries.

This study aimed to evaluate the cross-sectional and prospective associations between patterns of alcohol consumption and HRQOL in a cohort of community-dwelling older adults in Spain. Specifically, the effect of the Mediterranean drinking pattern (MDP), defined as reported moderate alcohol intake with wine preference and drinking only with meals, on HRQOL was assessed. Based on previous evidence showing that low-to-moderate alcohol consumption has beneficial effects on the health of older adults, we hypothesized that low-to-moderate alcohol consumption, and in particular the Mediterranean drinking pattern, would be associated with better HRQOL.

2. Methods

2.1. Study design and population

Participants of the Seniors-ENRICA cohort were selected in 2008-2010 by stratified cluster sampling of the non-institutionalized adult population of Spain. First, the sample was stratified by province and size of municipality, then clusters were selected randomly in two stages (municipalities and census sections), and finally, households were selected by random telephone dialing. Subjects in the households were selected proportionally to the age and sex distribution of the population in Spain (León-Muñoz et al., 2014; Rodríguez-Artalejo et al., 2011). At baseline, information was collected in three stages: a phone interview (used to obtain data on socio-demographic factors, lifestyle and morbidity) and two home visits. In the first visit, nurses collected blood and urine samples, while in the second, a physical examination was conducted, a diet history was recorded, and information on prescribed medications and functional limitations was obtained (León-Muñoz et al., 2014; Rodríguez-Artalejo et al., 2011). Participants aged 60 or over ($N = 2614$) were followed through 2012, when a second wave of data collection was performed.

Study participants provided written informed consent, and the Clinical Research Ethics Committee of 'La Paz' Hospital in Madrid approved the study.

2.2. Study variables

2.2.1. Alcohol consumption. At baseline, habitual alcohol consumption was estimated with a validated diet history, developed from the one used in the EPIC cohort study in Spain (Guallar-Castillón et al., 2014; León-Muñoz et al., 2015). This diet history collected information on 34 alcoholic beverages and used photographs to help quantify portion sizes. Standard beverage composition tables were used to estimate alcohol content. Study participants were classified as non-drinkers (including also occasional drinkers), ex-drinkers, moderate drinkers and heavy drinkers. The threshold between moderate and heavy drinking was set at ≥40 g/day in men and ≥24 g/day in women (León-Muñoz et al., 2015). A preference for wine or other alcoholic beverage was considered when it accounted for more than 80% of alcohol consumed (Valencia-Martín et al., 2011). Drinkers were also classified into those who drank only with meals (lunch and dinner), those who drank only outside of meals, and those who drank at any time. Finally, a Mediterranean drinking pattern (MDP) was defined as moderate average alcohol consumption (and no binge drinking), with wine preference and drinking exclusively with meals (Willett et al., 1995). This pattern was used because there is recent evidence that adherence to the MDP is associated with a reduction in mortality that cannot be entirely explained by moderate drinking (Gea et al., 2014).

2.2.2. Health-related quality of life. HRQOL was measured at baseline and at the end of follow-up using the second version of the 12-item Short Form Health Survey (SF-12; Ware et al., 2002), previously validated in Spain (Schmidt et al., 2012). The SF-12 comprises 8 dimensions of quality of life, which can be combined into a physical component summary (PCS) and a mental component summary (MCS). Both summaries were standardized to a national norm with a mean of 50 and a standard deviation of 10. Higher scores in the PCS or the MCS indicated better HRQOL, with a 2-point and an 8-point difference deemed to be, respectively, a small and a moderate-to-large difference (Kazis et al., 1989; Vilagut et al., 2008).

2.2.3. Potential confounders of the study association. At baseline, information was collected on variables that, according to the literature, might be related to both alcohol consumption and HRQOL, such as sex, age, educational level, tobacco smoking, time spent watching TV, physical activity at leisure time and in the household, and adherence to the Mediterranean diet using the Mediterranean Diet Score (MDS), excluding the alcohol consumption item (León-Muñoz et al., 2014; Trichopoulou et al., 2003). A higher score in the MDS indicates a better adherence to the Mediterranean diet. Weight and height, measured in standardized conditions (Gutiérrez-Fisac et al., 2012), were used to calculate the body mass index (BMI) as the weight in kg divided by the square of height in m. Morbidity was assessed by asking the participants if they had been previously diagnosed with cardiovascular disease (myocardial infarction, stroke or heart failure), diabetes, chronic respiratory disease (asthma or chronic bronchitis), osteomuscular disease (osteoarthritis, arthritis or hip fracture), sleep apnea, or depression requiring treatment. Functional limitations in instrumental activities of daily living (IADL) were measured with the Lawton and Brody Scale (Lawton and Brody, 1969), with the ques-

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