Paradigm shift in the relationship between alcohol and health: the less, the better

Cambio de paradigma en la relación alcohol y salud: cuanto menos, mejor

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The consumption of alcoholic beverages is deeply rooted in Western culture and plays a part in most traditions and celebrations. However, this consumption is not without risks, depending on the amount, frequency and pattern of consumption, as well as the characteristics of the consumer, such as age, sex and some health conditions. Despite the accumulation of evidence in scientific research regarding the toxicity of alcohol, the pressure to drink continues to increase. This requires a redefinition of the limits of low-risk consumption by the health authorities.

Alcoholic drinks are consumed daily by 7.4% of the Spanish adult population (Observatorio Español de las Drogas y las Adicciones, 2019). Alcohol is an addictive substance capable of causing dependence and is related to over 200 health problems (Rehm et al., 2017; World Health Organization, 2018). Alcohol use is the seventh biggest risk factor for both death and loss of disability-adjusted years of life. The only alcohol use that minimizes loss of health is zero (GBD 2016 Risk Factors Collaborators, 2017).

Alcohol and cardiovascular risk

Although low doses of alcohol have been shown to have a beneficial effect in ischemic heart disease and thrombotic stroke, most of the studies reporting this are observational and do not contextualize this effect within the consequences that alcohol use has on global health (Brien, Ronksley, Turner, Mukamal & Ghali, 2011). The relationship between drinking and cardiovascular risk is complex and multifactorial, with various biases described in the literature of how this relationship may be modified. Indeed, we know that binge drinking increases the risk of heart attack (Leong et al., 2014) and that drinking over 30g/day increases the risk of other cardiovascular diseases such as arterial hypertension, atrial fibrillation, alcoholic cardiomyopathy or heart failure (Mukamal & Lazo, 2017). A study published in 2015 revealed that with doses above 10 g/day in women or 20 g/day in men, the risk of heart attack fell by 24%, but the risk of cancer rose by 51% (Smyth et al., 2015). The possible cardiovascular benefit does not come close to offsetting mortality from all causes (Wood et al., 2018).

Received: June 2020; Accepted: October 2020.

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Alcohol and cancer

As cancer is one of the main causes of morbidity and mortality, it is essential to take into account studies on alcohol and cancer if the complexity of the alcohol-disease relationship is to be understood. Small amounts of alcohol increase the risk of some of the most common cancers in the general population, such as colon (Cho, Lee, Rimm, Fuchs & Giovannucci, 2012), esophagus (Matejcic, Gunter & Ferrari, 2017) or breast cancer (Shield, Soerjomataram & Rehm, 2016). Some studies reporting a possible "beneficial" effect of alcohol on certain cardiovascular diseases actually hide the carcinogenic effect of the main metabolite of alcohol, acetaldehyde, in relation to the appearance of various types of cancer (Singh, Arcaroli, Thompson, Messersmith & Vasiliou, 2015). It is estimated that the risk of digestive cancer increases 10-30% for every 20 g/day of alcohol use. Evidence also indicates that 10% of cancers in men and 3% in women are alcohol-related, with the median 5-year survival rate for such cancers being 50%. The IARC (International Agency for Research on Cancer) lists alcohol as a Group A carcinogen for which there is no safe level of exposure (International Agency for Research on Cancer, 2012).

Limitations of systematic reviews on alcohol and mortality

Some meta-analyses indicate a positive association between mortality and low alcohol-use thresholds. However, such results cannot be interpreted without taking into account many of the limitations of the primary studies on which they are based (Stockwell et al., 2016): 1) Classification bias (combining ex-drinkers and non-drinkers); 2) Bias by omitting binge drinking; 3) Bias by omitting confounding variables (socioeconomic level, physical activity and diet); 4) Selection and generalization bias (confusing disease mortality with global mortality); 5) Publication bias (in the representation of cardiovascular risk studies) and 6) Bias due to industry-sponsored publication (conflicts of interest). Furthermore, many studies are based on samples which are not very representative of the general population. Because of the difficulties in follow-up that would be involved, they do not include groups at high risk of alcohol-related harm, such as marginalized or institutionalized populations and population strata of very low socioeconomic level. Given all these limitations, only studies free of the above biases should be considered when establishing a low-risk consumption threshold.

The paradigm shift

A review of the most recent bias-free cohort studies indicates that the levels above which a significant increase in mortality risk is evidenced range from 20 to 60 g/day of alcohol for men and 12 to 20 g/day for women (Ministerio de Sanidad, 2020). These data come from a review of studies published between 2015 and 2019 which used people who had never drunk alcohol (excluding ex-drinkers) as the reference population and which provided results adjusted for confounding variables such as smoking, body mass index, and socioeconomic status. Furthermore, the results are similar to the figures given in other countries and are aligned with the recommendations of some of the most relevant articles stating that the levels of low-risk alcohol use for the European cultural environment should be of 15-20 g/day in men and 8-10 g/day in women (Shield et al., 2017). The differences in consumption by sex are determined by differences in alcohol dehydrogenase levels and by metabolic capacity.

A paradigm shift would entail that no professional should recommend the consumption of alcohol for any health reason. Although it may decrease the risk of a particular disease slightly, it will not improve the overall prognosis of the patient. Low risk alcohol consumption limits should be 20 g/day for men and 10 g/day for women, assuming there is no zero risk. The idea must be transmitted to the population that the greatest benefit to health is derived from not drinking alcohol at all or doing so in lower quantities than those accepted to date. In December 1995 the WHO organized a Conference in Paris with the title 'Alcohol, less is better' (World Health Organization. Regional Office for Europe & Anderson, 1996). Twenty-five years later, scientific evidence has accumulated to confirm this and promote this paradigm shift: Alcohol, the less, the better.

Conflicts of interest

The authors declare that there is no conflict of interest.

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