



Coffee as a nutraceutical beverage[☆]

Dear Editor,

We have read with great interest the paper “Nutraceutical compounds: Echinoids, flavonoids, xanthenes and caffeine identified and quantitated in the leaves of *Coffea arabica* trees from three regions of Brazil.” by de Almeida RF and coworkers (de Almeida et al., 2019) and we found his manuscript of importance with a view to clinical prevention. This study examined we identified and quantitated polyphenolic compounds along with caffeine present in methanol extracts of *Coffea arabica* leaves from three different regions of Brazil (Ceará, Minas Gerais and São Paulo). They found that the mean concentration of total polyphenolic compounds in the leaves of *C. arabica*, harvested from three different regions of Brazil was quite variable. Authors concluded that coffee leaf tea, appears to be an excellent functional beverage, with its high content of polyphenolic compounds, which may render positive biologic effects, when inbibed as part of the normal human diet.

With reference to the findings reported in the paper, we would like to make the following contribution to the discussion.

In a recent paper we found that coffee consumption was associated with a decreased risk of developing asymptomatic PAD in a selected population of pre-menopausal women (Mattioli, Migaldi, & Farinetti, 2018). Women with high coffee consumption had a good adherence to Mediterranean Diet and high levels of physical activity suggesting a healthier lifestyle, a known factor of prevention of atherosclerosis. However the analysis adjusted for some cardiovascular risk factors suggest a direct action of coffee on vessels. It is known that concentration of antioxidants varies with coffee preparation (espresso, filtered, percolated) as well as the composition of coffee and subsequently the concentration and bioavailability of antioxidants compounds. Espresso coffee is very popular in Mediterranean Countries and is part of the healthy Mediterranean Diet that is characterized by high intake of polyphenols. (Mattioli et al., 2017; Ochiai et al., 2004) High antioxidants intake prevents the development of atherosclerosis both in men and women and also prevents the onset and recurrences of atrial fibrillation (Mattioli, 2007; Mattioli, Bonatti, Melotti, & Mattioli, 2008).

The beneficial effects derived from polyphenols appear to be mediated via a plethora of biochemical pathways and signaling mechanisms acting either independently or synergistically. Indeed, polyphenols have shown in in vivo studies to exert antiatherosclerotic effects in the early stages of atherosclerosis development (e.g., decrease LDL oxidation); improve endothelial function and increase nitric oxide release (potent vasodilator); modulate inflammation and lipid metabolism (i.e., hypolipidemic effect); improve antioxidant status; and, protect against atherothrombotic episodes including myocardial ischemia and platelet aggregation.

de Almeida RF and coworkers showed that coffee leaf tea could be an excellent functional beverage, containing a range of polyphenolic compounds that display many positive biologic effects, including high antioxidant activity, which may protect the human body against DNA-damage linked to oxidative stress. They evaluated coffee leaf tea, on contrary we analysed coffee drink. However the paper from de Almeida RF add important information on the potential role of coffee as nutraceutical.

More specific studies are needed in order to evaluate the quality and quantity of polyphenols in coffee.

Conflict of interest

No conflict of interest.

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