

Coffee consumption prevents liver cancer development

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Abstract

Coffee consumption has its benefits on human health. In the specific area of hepatology, previous studies have suggested that coffee decreases liver enzymes and inhibits progression of liver fibrosis. Additionally, in a recent systematic review and meta-analysis, coffee consumption was shown to have an inverse association with the development of liver cancer. That well-designed study suggested that coffee drinking would be beneficial in terms of preventing liver cancer. Coffee drinkers at risk of developing hepatocellular cancer should consider the potential benefits of drinking coffee.

Keywords: Coffee consumption • Diabetes mellitus • Coffee drinkers • Diabetes mellitus

Commentary

The origins of the coffee bean far outdate reliable written records but historical references place its discovery in the Ethiopian highlands over 1000 years ago. The popularity of coffee has continued to grow with an estimated 255 kilograms consumed every second around the world. Naturally, with such wide use, the effect of coffee consumption on human health has become an important area of research. Previous studies have shown that coffee consumption decreases the risk of developing diabetes mellitus, heart disease and stroke. In a recent meta-analysis, coffee drinking was determined to have an inverse association with the development of liver cancer. Coffee consumption has been shown to influence the levels of liver enzymes such as aspartate aminotransferase, alanine aminotransferase and gamma-glutamyltransferase. Additionally, there has been evidence to suggest a decrease in the rate of hepatic fibrosis progression in coffee drinkers.

In the September issue of Journal of Gastrointestinal and Liver diseases, Bhurwal et al. performed a systematic review and meta-analysis evaluating twenty studies to determine the impact of coffee consumption in preventing liver cancer. Overall, coffee drinkers had a significantly decreased risk of development of liver cancer compared to non-drinkers (Risk Ratio (RR) 0.69; 95% Confidence Interval (CI) 0.56-0.85; $p < 0.01$). Subgroup analysis revealed that drinking more than 2 cups of coffee had significant impact in preventing liver cancer (RR 0.51; 95% CI 0.38-0.69). Even though the analysis was well designed with multiple studies across several

continents, it had its limitations. There is lack of standardization of coffee preparation and serving size which prevents standardization. The duration of the coffee intake was also unknown. Therefore, further clinical trials eliminating the confounders and determining a possible dose-response would be valuable. Despite the limitations, the results from the systematic review and meta-analysis suggest a beneficial impact of coffee in preventing hepatocellular cancer. However, the application of the coffee consumption to prevent liver cancer in daily practice is still uncertain. Even though the main compounds associated with protective influence are caffeine and chlorogenic acid, there are more than a thousand components of coffee which could be responsible. Significant coffee consumption has its own adverse effects such as hypertension, tachycardia and physical dependence. Further studies are needed to determine the specific ingredient(s) of coffee exerting a protective role in liver disease. Nonetheless, the data from Bhurwal et al. indicate that coffee consumption is associated with a significantly decreased risk of liver cancer development. Coffee drinkers at risk of developing liver cancer may possibly benefit from coffee consumption. As every good meta-analysis, the study by Bhurwal et al. points out the need for more data from well-designed studies.

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