Does caffeine’s metabolization phenotype can influence coffee drinking habit?

The association between coffee intake and risk of myocardial infarction, hypertension, breast cancer and Parkinson’s disease, to name a few, has been an object of discussion due to controversial results from various epidemiologic studies in the past. Caffeine was the main compound present in coffee that those studies were directed to. Caffeine is primarily metabolized by cytochrome P450 1A2 (CYP1A2). CYP1A2 accounts for approximately 95% of caffeine’s metabolism and shows wide variability in enzyme activity between individuals. The vast majority of the human population is fast caffeine metabolizer. It is our hypothesis that a slow caffeine metabolizer tends to consume decaffeinated coffee in order to avoid caffeine accumulation and possible adverse effects.

The objectives of this presentation are to:

- Evaluate the importance of the association between CYP 1A2 genotype and the frequency and type of coffee consumed (caffeinated or decaffeinated or not at all);
- Validate the association between CYP 1A2 genotype and blood levels of caffeine after ingestion of a single brewed standardized cup of coffee;
- Discuss the use of pharmacogenetics and pharmacogenomics to identify potential genes that can be overexpressed within the coffee drinkers and non-drinkers population.

Biography

Roseane Maria Maia Santos has completed her PhD in 2005 from State University of New York at Buffalo. She moved to USA in 1999 after 16 years of successful career as pharmacist in the areas of academia, industry and government in Rio de Janeiro, Brazil. She wrote books in collaboration with Brazilian experts on her research field of Coffee and Health benefits. She has served as consultant for coffee companies and peer reviewer for various journals of repute. Presently, she is focused in the validation of biomarkers for coffee consumption and development of coffee products as nutraceuticals.

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