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Association between caffeinated beverage intake and serum uric acid levels among undergraduates of the University of Sri Jayewardenepura

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Background: Caffeinated beverages are popular among undergraduates. Caffeine consumption is acknowledged to be associated with Serum Uric Acid (SUA) concentration.

Objective: To determine the association between caffeinated beverage intake and serum uric acid levels among undergraduates aged 20-26 years, of the University of Sri Jayewardenepura.

Method: A cross-sectional study was conducted using undergraduates (n=100) aged 20-26 years, of the Faculty of Allied Health Sciences of University of Sri Jayewardenepura. Information on caffeine consumption (assuming that caffeine content in each cup is equal) was assessed using a validated self-administered questionnaire. Three milliliters of whole blood were collected by venipuncture and SUA levels of separated serum were measured using the Erba XL 100 biochemistry analyzer. Data analysis was done using IBM SPSS version 25.0. Results were considered statistically significant at p value <0.05.

Results: Prevalence of black tea, brewed coffee and instant coffee consumption was 96.0%, 83.0% and 61.0%, respectively among the study population. Out of 100 participants, 71.0% (n=71) were routine users ($\geq$7 cups/week) while 29.0% (n=29) were non-routine users (<7 cups/week or never consumers). The mean ($\pm$SD) SUA level was significantly low among routine consumers (3.81 mg/dL) than non-routine consumers (5.21 mg/dL, p=0.000). Tea consumption was further analyzed according to the number of cups consumed. Mean ($\pm$SD) SUA levels of students consuming >1 cup, 1 cup, 2 cups, 3-4 cups per day were 4.96 ± 0.1, 4.36 ± 0.5, 3.67 ± 0.6 and 3.48 ± 0.5 mg/dL, respectively. There was a negative correlation between the number of tea cups consumed per day and the mean SUA levels.

Conclusion: Tea is the most commonly used caffeinated beverage and, there was a significant negative association between total caffeine consumption and SUA levels.