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Effects of Non-Decaffeinated Coffee and Decaffeinated Coffee After Intervention of High Purine Diets on Serum Creatinine Levels on Rats (*Rattus norvegicus*) : a pre-post-test randomized control group design

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Objectives: The administration of coffee is believed to reduce the condition of hyperuricemia. Previous studies state that the good effect of coffee on gout is not influenced by its caffeine content but the content of other active compounds. This study aims to know the effect of non-decaffeinated coffee and decaffeinated coffee after intervention of high purine diets on serum creatinine levels on rats

Methods: The study utilized pre-and-post-test randomized control group design. Twenty four rats were divided into four groups: normal (N), control (C), treatment 1 (T1), and treatment 2 (T2). Then all the rats except N group were induced beef broth as much as 700 mg / kgBW / day for thirty days, followed by giving non-decaffeinated coffee to T1 as much as 108 mg / 200 kgBW and the provision of decaffeinated coffee on T2 as much as 108 mg / 200 kgBW for thirty days. The creatinine levels measurement was conducted before (day 0) and after (day 15) the intervention

Results: The mean of serum creatinine (mg/dL) of rat before the intervention in N, C, T1, and T2 consecutively were 0.71 ± 0.03 , 0.75 ± 0.03 , 0.76 ± 0.02 , and 0.73 ± 0.02 . The mean of serum creatinine (mg/dL) of rat after the intervention in N, C, T1, and T2 consecutively were 0.75 ± 0.05 , 3.41 ± 0.09 , 3.95 ± 0.03 , and 3.90 ± 0.10 . Paired T-test showed that there were significant differences between pre and post body weight measurement in all group (p -value = 0.00). One-way Anova with post hoc bonferroni test showed that there were significance differences of mean creatinine levels between group ($p = 0.00$).

Conclusions: This study revealed that non-decaffeinated coffee and decaffeinated coffee may interfere creatinine levels. The intervention of non-decaffeinated coffee and decaffeinated coffee can help diminishing of creatinine levels disruption caused by high purine diet.

Table 1. Mean of Serum Creatinine Levels for Each Group in Pre and Post Intervention

Group	Mean of Pre-Creatinine Levels(mg/dL)	Mean of Post-Creatinine Levels(mg/dL)	Δ Mean of Creatinine Levels(mg/dL)	Paired T-Test (P-value)
Normal	0.71 ± 0.03	0.75 ± 0.05	0.73	0.00
Control	0.75 ± 0.03	3.41 ± 0.09	2.08	0.00
T1	0.76 ± 0.02	3.95 ± 0.03	2.36	0.00
T2	0.73 ± 0.02	3.90 ± 0.10	2.32	0.00

Figure 1. Clustered Bar Mean of Serum Creatinine for Each Group in Pre and Post Intervention