

“Gadagi Magani” Tea Is Detrimental: Affects Biochemical Parameters

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Abstract: “Gadagi Magani” tea is a herbal tea composed of many different herbs, roots, extracts, shrubs and leaves prepared locally in form of tea consumed by many labourers, youths, tailors, tricyclists and high way drivers in order to get extraordinary strength to endure hardship and overcome heavy duty within short period of time. The following biochemical parameters were routinely determined among consumers: serum level of Aspartate aminotransaminases (AST), Alanine aminotransferase (ALT) activities were pragmatically higher than that of control, increase in serum creatinine level, lower sera urea and glucose levels and the sera levels of lipoproteins were also lower compared to controls. Hence, “Gadagi” affects negatively the liver enzymes, blood sugar level, serum urea, creatinine and carbonate, positively as it lowers lipid profile.

Key words: “Gadagi Magani” Tea, Liver Enzymes, Bilirubin, Sugar, Urea, Creatinine and lipid profile.

1. INTRODUCTION

“Gadagi Magani” Tea is a herbal tea composed of many different herbs, roots, extracts shrubs and leaves prepared locally in form of tea consumed by many labourers, youths, tailors and high way drivers in order to get strength to endure hardship and overcome heavy duty within short period of time, [14]. “Gadagi” is of different types viz; Sak, Magani and Sada, [5], Black and Cockroach, [14]. It has been reported by Gadanya et al, that the rate of consumption was progressively increasing among few northern states of Nigeria, [5], and some part of Niger Republic, [14]. The consumers were found to enrich Gadagi with some drugs, Cannabis sativa, and/ or energy drinks such as Kukubima, Passion or power fist, [1]. Liver Enzymes also called aminotransaminases, are group of enzymes that clear provide information as regards to the state of liver, [8]. These include Aspartate aminotransaminases (AST), Alanine aminotransferase (ALT) and Alkaline phosphatase (ALP) and are useful biomarkers of liver hitch, [7, 11, 12]. Lipid profile also called lipid panel, the measures of choleaterol, HDL-choleaterol, LDL-choleaterol and triglyceride, [4]. The result of lipid profile can identify definite genetic diseases

and estimate risk for cardiovascular disease, certain forms of pancreatitis and other diseases, [6]. Urea is a famous form of amino group disposal derived from amino acids that constitute of up to 90% of nitrogen containing compound in urine, [2]. Elevated serum urea level is associated with renal impairment, congestive heart failure and gastrointestinal hemorrhage, [9]. Creatinine is a catabolic product of creatine phosphate produced as a result of muscle metabolism and is removed from blood without any further reabsorption, [16]. High level of creatinine gives clue for renal dysfunction, [13]. Blood Glucose level is the amount of glucose in the blood and is regulated by the body as a part of homeostasis, [3]. High level of blood sugar is referred to as hyperglycemia and low level is called hypoglycemia, [3]. Hypoglycemia results from either hormonal disorder, drugs, critical illness e.g. liver, kidney failure among others, [15].

2. DETRIMENTAL EFFECT GADAGI TEA ON:

a) Liver Enzymes: “Gadagi Magani” tea affects liver enzymes activities as the dose increases. According to the research conducted in 2009 by Atiku et al, a specific dose of “Gadagi” tea was orally administered to the experimental animal and the serum level of AST and ALT activities were determined. Pragmatically, ALT, AST and ALP were found to be higher than that of control, [1]. Increased ALT, AST and ALP activities was the biochemical marker for hepatotoxicity effect of “Gadagi” [1]. Bilirubin determined was found to be higher in the experimental animals than in control. However it was found to be increasing with increase in “Gadagi Magani” dose, [1].

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Table 1. Serum activities of ALT, AST, ALP and bilirubin level in albino rats after seven days of oral administration with low dose, standard dose, and high dose of “Gadagi Magani Tea”

Dose (mg/kg)	ALT(U/l)	AST(U/l)	ALP (U/l)	T.Bil. (mg/dl)	D.Bil. (mg/dl)
Low dose	53.3±2.31	41.3±5.51	267±16.15	1.66±0.075	0.19±0.075
Standard dose	62.7±3.06	52.7±6.03	322±15.59	1.30±0.100	0.38±0.081
High dose	76.7±5.69	77.3±11.06	368±15.59	1.53±0.153	0.53±0.087
Control	24.3±1.15	28.3±2.31	129±16.17	0.61±0.064	0.047±0.081

(Source: Atiku et al., 2009)

However, histopathological test result shows that, at low dose of “Gadagi Magani” tea, no remarkable effects were detected. Perhaps, in standard and high concentration, fibrosis, fatty change, hepatocellular necrosis severe hepatitis (in case of standard dose) and Hepatocellular necrosis. Fibrosis and chronic acute hepatitis for high dose, [1].

b) Urea, Creatinine and Carbonate: it has been reported that, the mean serum level of Urea was significantly lower among the “Gadagi” tea consumers due to excessive perspiration and Polyuria result in dehydration and

excessively, abnormal release of urea in the urine, [14]. Low serum urea was associated with liver disease, anabolic disorder, renal dysfunction and inappropriate anti-diuretic hormone syndrome, [9]. Whereas, the serum Creatinine was significantly higher among the “Gadagi Magani” tea consumers than the control group, [14]. According to Taylor et al., the higher serum creatinine was the biomarker of kidney failure, [9]. The serum level of carbonate was found to be highly affected among the consumers, as it was found to fall below normal range, also associated with kidney impairment, [10].

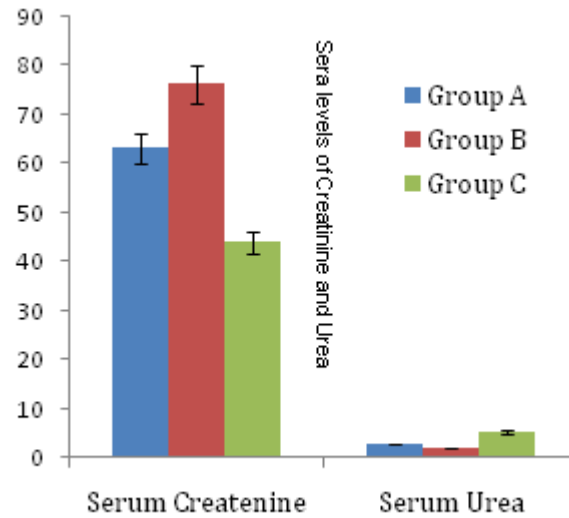


Figure 1. Comparative Graph for Sera Creatinine and Urea levels (Umar et al., 2015)

c) Glucose and Lipid profile: it has been disclosed that, the mean glucose level of control was significantly higher than that of experimental animals, [1]. This is likely possible as there was greatly reduced food intake as observed among the “Gadagi Magani” tea consumers which lead to hypoglycemic condition and reduced liver function due to its inability to execute glycogenolysis and gluconeogenesis, [1]. The total cholesterol, HDL-

cholesterol, Triglyceride, Low density lipoprotein (LDL) and very Low density lipoprotein (VLDL) were also determined by Gadanya et al, after orally administered “Gadagi Magani” in the experimental animals. The mean sera levels of lipid profile parameters were tempered by “Gadagi Magani” tea. Lipoproteins determined were insignificantly lower compared to control group, [4].

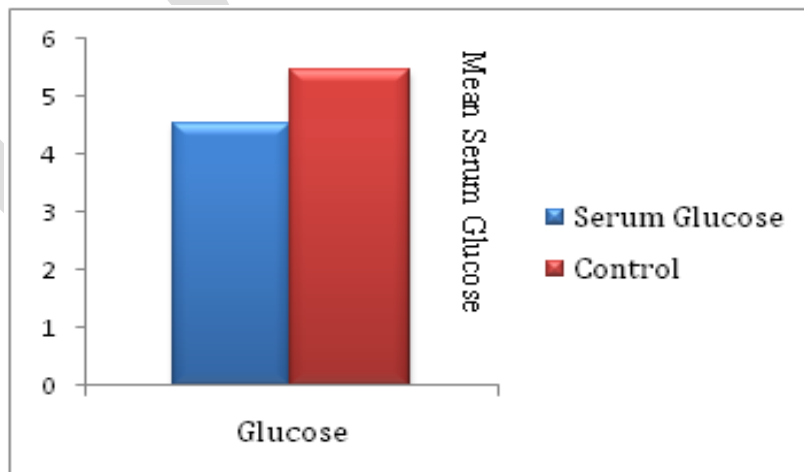


Figure 2. Serum Glucose level sample comparing with Control (Source: Atiku et al., 2009)

3. CONCLUSION

“Gadagi Magani” tea consumption is really detrimental as it can affect liver and Kidney functions, interferes with certain metabolic process. Nevertheless, at standard dose, it can be taken as it lowers lipids level hence, could lower the risk for cardiovascular diseases

4. RECOMMENDATION

Since it lowers cholesterol level, modern techniques and standard pharmacological approach should come to this issue in order to derive and determine the specifically, the standard dose and test it among human to serve means to reduce the risk for cardiovascular disease.

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