



Journal of Hospital Pharmacy
An Official Publication of Bureau for Health & Education Status Upliftment
(Constitutionally Entitled as Health-Education, Bureau)

Evaluation of the correlation between blood uric acid and glucose levels in patients with healthy, prediabetic, and diabetic patients

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Running title: Evaluation of the correlation between blood uric acid and glucose levels in patients with healthy, prediabetic, and diabetic patients.

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Abstract:

Background: Previous research has demonstrated a correlation between hypertension and cardiovascular diseases and serum uric acid (SUA) through epidemiological studies. Only a small number of studies—both in healthy and diabetic subjects—have examined the connection between SUA and glucose levels, and their results have been inconsistent. Among healthy, prediabetic, and diabetic people, the purpose of this study was to investigate the association between SUA and fasting blood glucose (FBG) levels. **Methods:** A total of 500 blood samples were drawn from 310 male and 190 female subjects, and the samples were analyzed for lipid levels, FBG, and SUA. Based on the SUA concentrations, all participants were divided into four quartiles; FBG levels ≥ 126 mg/dL and 100–125 mg/dL, respectively, were used to define diabetes and prediabetes. Multinomial logistic regression analysis was used to assess the relationship between SUA and diabetes. **Results:** The mean SUA level was lower in the prediabetic and diabetic subjects, in contrast to healthy persons. SUA had a negative correlation with FBG but a positive correlation with BMI, TG, and TC. Diabetes was less common as SUA concentration increases over the quartiles. Regression study revealed an inverse relationship between SUA levels and diabetes mellitus. **Conclusion:** Serum uric acid (SUA) levels were elevated in persons without any health conditions, but decreased in individuals with prediabetes and diabetes when their fasting blood glucose (FBG) concentrations increased. An important negative correlation was found between the levels of serum uric acid (SUA) and diabetes individuals. Additional research is required to assess the dependability of utilizing SUA as an indicator of diabetes.

Key words: Fasting blood sugar, Serum uric acid, Diabetics.

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Website: <http://www.journalofhospitalpharmacy.in>

Received on 12/02/2024

Accepted on 22/02/2024 © HEB All rights reserved

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