World Academy of Science, Engineering and Technology
International Journal of Pharmacological and Pharmaceutical Sciences
Vol:17, No:11, 2023

Kidney Stones in Individuals Living with Diabetes Mellitus at King Abdul-Aziz Medical City - Tertiary Care Center, Jeddah, Saudi Arabia: A Retrospective Cohort Study

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Abstract : Background: Kidney stones greatly affect individuals. The range of these effects regarding multiple kidney stone factors (size, presence of obstruction, and modality of treatment) in stone formers with and without diabetes has not been well explored in the literature to the best of the author's knowledge. Our goal is to investigate this unexplored correlation between diabetes and kidney stones by conducting a Cohort retrospective study to precisely evaluate the effects of this condition and the existence of complications in adult individuals with diabetes in Saudi Arabia in comparison to a non-diabetic control group. Methodology: This is a retrospective cohort study aiming to evaluate the range of effects of kidney stones in stone formers in a group of adults diagnosed with type 2 diabetes mellitus and adults without diabetes between 2017 and 2019 in Jeddah, Saudi Arabia. An IRB approval has been granted for this study. The data was analyzed using SPSS. The data was collected from the 1st of December 2022 until the 1st of March 2023. Results: A total of 254 individuals diagnosed with kidney stones were included, 127 of whom were adult individuals with type 2 diabetes, and 127 were non-diabetics. Our study shows that the individuals affected with diabetes were more likely to have larger kidney stones in comparison to individuals without diabetes (13.12 mm vs. 10.53 mm, p-value = 0.03). Moreover, individuals with hypertension and dyslipidemia also had significantly larger stones. On the other hand, no significant difference was found in the presence of obstruction and modality of treatment between the two groups. Conclusion: This study done in Saudi Arabia found that individuals with kidney stones who concurrently had diabetes formed larger kidney stones, and they were also found to have other comorbidities such as HTN, dyslipidemia, obesity, and renal disease. The significance of these findings could assist in the future of primary and secondary prevention of renal stones.

Keywords : kidney stone, type 2 DM, metabolic syndrome, lithotripsy
Conference Title : ICESRD 2023 : International Conference on Endocrine System and Related Drugs
Conference Location : Jeddah, Saudi Arabia
Conference Dates : November 20-21, 2023