



Hippuric Acid Crystals Post COVID-19 Infection

Rateesh Sareen* and Gupta GN

Department of Pathology & Transfusion Medicine, Santokba Durlabhji Memorial Hospital & Research Centre, India

Keywords

Hippuric acid; Crystals; Urine examination

Clinical Image

A healthy male aged 40 years came for routine medical checkup, his complete blood count, liver and renal function tests were unremarkable. The routine urine examination was unremarkable except for the presence of crystals (urine Ph - 7.4). The crystals were brown colorless elongated prism/plate like (Figure 1, 2). The crystals were insoluble in acetic acid and dissolved in 10% NaOH. X-ray crystallography was not available to ascertain the exact nature of these crystals. The asymptomatic nature of patient and solubility of crystals suggested that they were Hippuric acid crystals. Hippuric acid is a carboxylic acid found in urine formed by combination of benzoic acid and glycine [1,2]. These crystals have been observed in ethylene glycol poisoning due to super saturation of monohydrate calcium oxalate [3-5]. Hippuric acid has been used as marker of fruits and vegetables intake in some literature studies [6]. The dietary history revealed from the patient that he was consuming different types of fruit juice post his COVID-19 recovery.



Figure 1: Urine hippuric acid crystal 1% acetic acid.



Figure 2: Urine hippuric acid crystals.

OPEN ACCESS

*Correspondence:

Rateesh Sareen, Department of Pathology & Transfusion Medicine, Santokba Durlabhji Memorial Hospital & Research Centre, Jaipur, India, E-mail: drrateeshsareen@yahoo.co.in

Received Date: 08 Jan 2022

Accepted Date: 15 Feb 2022

Published Date: 25 Feb 2022

Citation:

Sareen R, Gupta GN. Hippuric Acid Crystals Post COVID-19 Infection. *Ann Nurs Primary Care*. 2022; 3(1): 1019.

Copyright © 2022 Rateesh Sareen.

This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The crystals were therefore a result of higher fruit juice intake in our case. As such the hippuric acid crystals are devoid of any significant clinical relevance but the case reflects the critical correlation of diet, symptoms and morphological examination for urinary crystals so that unnecessary investigations are not done that at times could be taxing to an otherwise healthy person.

References

1. C F van Sumere, H Teuchy, H Pe, R Verbeke, J Bekaert. Quantitative investigation on the hippuric acid formation in healthy and diseased individuals. *Clin Chim Acta*. 1969;26(1):85-8.
2. Sugita M, Aikawa H, Suzuki K, Yamasaki T, Minowa H, Etoh R, et al. Urinary hippuric acid excretion in everyday life. *Tokai J Exp Clin Med*. 1988;13(4-5):185-90.
3. Huhn KM, Rosenberg FM. Critical clue to ethylene glycol poisoning. *Can Med Assoc J*. 1995;152(2):193-5.
4. Jacobsen D, Hewlett TP, Webb R, Brown ST, Ordinario AT, McMartin KE. Ethylene glycol intoxication: Evaluation of kinetics and crystalluria. *Am J Med*. 1988;84(1):145-52.
5. Andreelli F, Blin P, Codet M P, Fohrer P, Lambrey G, Massy Z. Diagnostic and therapeutic management of ethylene glycol poisoning. Interest of crystalluria. About a sighting. *Nephrologie*. 1993;14(5):221-5.
6. Guerra A, Folesani G, Mena P, Ticinesi A, Allegri F, Nouvenne A, et al. Hippuric acid in 24 h urine collections as a biomarker of fruits and vegetables intake in kidney stone formers. *Int J Food Sci Nutr*. 2014;65(8):1033-8.