Editorial Comment

The authors measured heavy metals (HMs) and trace elements (TEs) in patients of bladder tumors and controls. I would complement the authors for undertaking this research highlighting a controversial aspect about the role of exposure to HM and TE in bladder tumors.

It is known that chronic exposure to environmental carcinogens is a risk factor for bladder tumor development.[1] While the study is interesting, the authors have not addressed certain practical issues. Minerals, such as chromium, selenium, and zinc are present in many popular supplements and are sold over the counter.[2] Even manganese supplements are available. Consumption of these dietary supplements in the form of pills, sold over the counter, is common even in India.[3] However, a study from Taiwan noticed higher urinary levels of zinc and selenium in bladder cancer cases than in controls.[4] Similarly, some people drink water from copper utensils.[5] However, a Chinese study evaluating 81 patients showed that the urinary calcium, zinc, and serum copper levels in patients to be significantly higher ($P < 0.05$) than those of the control group.[6] It is evident that the issue needs to be resolved as it has practical implications.

While the authors highlight that HM and TE exposure is probably modifiable, they do not attempt to answer as to how this is possible from their study. Selection of controls, particularly if they were family members of the patients, would affect the outcomes. Occupational information about cases and controls may be contributory while smoking status may not be reliable in India as many consume oral tobacco but do not smoke. The geographical origin of the patients and controls would affect outcomes and the reason for higher levels of HM and TE in patients has not been postulated.

Bladder tumor is a significant health problem and, in India, it is ranked 17th in incidence and 19th in mortality.[7] Furthermore, the incidence varies across Indian population.[7] This variation among the population needs further evaluation and the answer could lie in the variation to environmental exposure. Despite the limitations, the study does highlight the possible significance of HM and TE exposure as risk factors in the development of bladder tumors. Better-designed studies are needed to clarify this issue which has real-life implications.

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REFERENCES

1. Kates M, Bivalacqua TJ. Tumors of the Bladder. In: Partin AW, Dmochowski RR, Kavoussi LR, Craig A, Peters CA, editors. Campbell-Walsh-Wein Urology. 12th ed. Philadelphia: Elsevier; 2021. p. 3073.
2. Available from: https://pharmeasy.in/online-medicine-order/new-a-to-z-gold-strip-of-15-capsules-211330. [Last accessed on 2023 Jun 02].
3. Available from: https://www.statista.com/statistics/1176058/india-share-of-people-taking-dietary-supplements/#:~:text=Share%20of%20people%20who%20consumed%20dietary%20 supplements%20India%202022&text=According%20to%20a%20survey%20by, that%20they%20took%20dietary%20 supplements. [Last accessed on 2023 Jun 02].
4. Lin CN, Wang LH, Shen KH. Determining urinary trace elements (Cu, Zn, Pb, As, and Se) in patients with bladder cancer. J Clin Lab Anal 2009;23:192-5.
5. Available from: https://www.hindustantimes.com/lifestyle/health/know-the-health-benefits-of-drinking-water-from-a-copper-vessel-as-per-ayurveda-101637672836724.html. [Last accessed on 2023 Jun 02].
6. Guo KF, Zhang Z, Wang JY, Gao SL, Liu J, Zhan B, *et al*. Variation of urinary and serum trace elements (Ca, Zn, Cu, Se) in bladder carcinoma in China. Asian Pac J Cancer Prev 2012;13:2057-61.
7. Mishra V, Balasubramaniam G. Urinary bladder cancer and its associated factors – An epidemiological overview. Indian J Med Sci 2021;73:239-48.

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