

Seasonal variations of renal colics and urolithiasis: is this the time for a shared benchmark to study the phenomenon?

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Dear Editor,

I read with interest the paper by Basiri and et al. [1] that appeared in the August issue of *Urological Research*. The authors investigated the seasonal variations of urolithiasis rates in different climatic regions across Iran. The study was a nationwide multicentric epidemiological research conducted by 787 imaging centers in 12 climatic regions esteemed as independent epidemiologic units, and collected more than 6,000 imaging-proven urinary stone patients including new and old cases. Four temporal phases were determined to represent the four seasons of the year, with a sampling limited to the last month of each term to restrict the intra-seasonal variations.

The authors found that geographically, the west and north of Iran, and seasonally, autumn followed by spring, winter, and summer have shown the highest incidence rates for the urinary tract stones.

As correctly stated by the authors, there are many epidemiologic studies on urolithiasis in different parts of the world, and the existing literature presents conflicting evidences regarding the prevalence rate in various general populations. Moreover, there is still an open debate on the real influence of a hot climate on the incidence of renal colic and urolithiasis [2, 3].

In my opinion, this survey-based cross-sectional study is affected by several major drawbacks, including methodological and analytical pitfalls.

Firstly, the study shows some kind of weakness about the analytical approach, as the sampling was limited to the last month of each season, not taking in account the cases presented during the prior months. In a recent paper it was shown a major influence of the climatic features of the 15 days preceding each renal colic on the specific clinical event, with a weaker correlation as the considered climatic exposure preceding a renal colic increases in length [3]. Taking into account this evidence, the sampling process described in the paper by Basiri introduced an analytical bias into the analysis of this phenomenon. Indeed, by limiting their case recruitment exclusively to the final month of each season they lost a number of patients effectively exposed to the climatic features typical of an investigated season but diagnosed earlier than the sampling stage, hence potentially leading to fallacious conclusions on the debated issue.

Secondly, in this paper any temperature and humidity references regarding the climate of Iran during this study were not reported to adequately understand which kind of environment the authors were talking of. Furthermore, a direct relationship between the incidence of renal colic and the maximum temperature and an inverse relationship with the minimum humidity, namely when the temperature rises above 27°C and relative humidity falls below 45% [3] was demonstrated. Therefore, readers require more details on local temperature and humidity changes over the investigated term of analysis and with regard to the 12 areas into which Iran was subdivided, based on the geographic proximity and the climatic similarities noted by the authors. Basiri and et al. themselves recognized that the variability of urolithiasis rates among distinct regions might be due to the different environmental features the populations were exposed to; nevertheless, without circumstantiating them out in this paper.

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Therefore, the limitations in the sampling rules, data collection methods and performed analysis affecting this paper may lead to the increase of published study adding only a little piece of information to the worldwide epidemiology of urolithiasis, without providing strong evidences and a clear scientific reference on one of the most interesting factors acting on the seasonal variations of renal colics and urolithiasis rates: the climatic features the patients are exposed to.

References

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