COMMENTS

Comment on S Memon, et al. (J Pak Med Assoc. 74: 1163-1166, June 2024)

Osmolar gap in hyponatraemia: An exploratory study

Muhammad Ramish Irfan

Madam, Your paper about the osmolar gap in hyponatraemia was much appreciated as it remains a subject shrouded in misunderstanding.

The observations reported in this paper are certainly thought provoking, therefore I would extend a few conceptual clarifications that I believe your readership would benefit from in gaining deeper insight about the findings reported in this study.

The difference between tonicity, osmolarity and osmolality is often disregarded and appears convoluted however, it is crucial to delineate between these terms nevertheless. Tonicity in particular requires special consideration as it denotes behaviour of solutions, relative to each other, separated by a semi-permeable membrane. As such, it would be more appropriate to use the term osmolality or osmolarity to describe hyponatraemia in your study. Osmolality and osmolarity are denoted by a specific unit of measurement (mOsm/kg and mOsm/L respectively) and are thus better suited to describe dysnatraemias.[1]

Additionally, considering the high proportion of hyperosmolar hyponatraemic patients in your study, the paper would have benefitted from an outlining of the percentage of these that were due to hyperglycaemia, especially since patients with comorbid type 2 diabetes mellitus were a considerable majority in your sample. This, alongside statistical correlation between such variables, would have strengthened your argument by highlighting a potential non-alcohol related cause for higher OG in hyponatraemic patients.

Moreover, the lack of elaboration on specific characteristics of patients with higher OG and in particular those that suffered mortality to further elucidate significance of OG in various clinical contexts was also noticeable. However, this only opens opportunity for further robust research by your team.

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References

1. Vujovic P, Chirillo M, Silverthorn DU. Learning (by) osmosis: An approach to teaching osmolarity and tonicity. Adv Physiol Educ 2018;42:626-35. Doi: 10.1152/advan.00094.2018.

REJOINDER

Response on S Memon, et al. (J Pak Med Assoc. 74: 1163-1166, June 2024)

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Shoukat Memon, Faiza Saeed, Ashar Alam, Javeria Chughtai, Salman Imtiaz

Thank you very much for your insightful comments, which will certainly enhance the clarity and highlight the importance of this topic. Our study revealed a notable number of patients with elevated osmolar gap (OG), with diabetes being the third most common comorbidity after CKD and hypertension. Addressing the influence of blood glucose on OG is indeed essential; however, due to journal limitations, I was unable to include the table showing the Mean ± SD of RBS (mg/dl) in the Raised OG group (n=141) at 153.94 ± 72.53 and in the Normal OG group (n=121). Notably, no cases of DKA were identified.

I acknowledge that this aspect, along with other limitations—such as the lack of measurements for total lipids, total protein, and serum lactate—was not thoroughly addressed in our study. These variables were initially excluded due to the study's primary focus on hyponatraemia, its severity, and outcomes. The discovery of elevated OG in a substantial number of patients became evident later in the research, prompting us to obtain IRB approval to include OG measurements. My goal was to emphasize this significant finding, which has not been widely recognized, and I encourage further research to investigate this area more comprehensively.

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