SCIENTIFIC LITERATURE REVIEW:

THE IMPORTANCE OF MEASURING OSMOLALITY IN MONITORING & MANAGING COVID-19 PATIENTS

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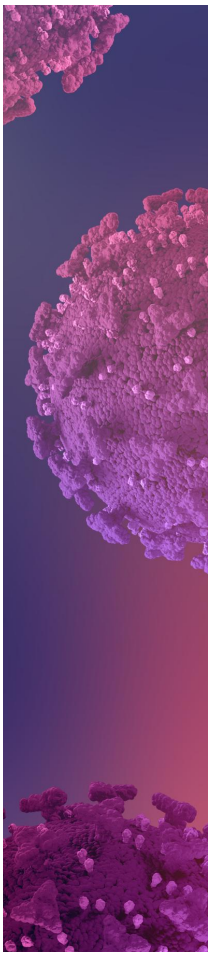
ABSTRACT

Proper medical management of COVID-19 patients is vital during the pandemic to improve treatment and reduce length of stay. A growing body of evidence in the literature demonstrates that osmolality– a critical test in the diagnosis of electrolyte disorders– is an important tool in monitoring and managing COVID patients. Osmolality has long been a quick, inexpensive and effective measurement used in the treatment of electrolyte abnormalities including hyponatremia and hyperglycemia, which are characterized by low blood sodium and high blood sugar respectively. Clinical researchers around the world– from the United States to the United Kingdom and Qatar– have reported numerous case studies of patients with hyponatremia and hyperglycemia precipitated by COVID-19. As of the time of this writing, there are over 50 publications in the National Center for Biotechnology Information (NCBI) electronic database published this year referencing 'osmolality' and 'COVID'. This resource summarizes key points from several of these publications and discusses considerations for clinical laboratories, staffed by the unsung heroes responsible for conducting critical testing each day.

KEY POINTS

- Osmolality is a critical tool in managing electrolyte disorders which are prevalent in suspected and known COVID patients.
- An electrolyte disorder may be an indication that a patient has COVID since hyponatremia (low sodium) can be the first and only presentation.
- The authors present case studies where osmolality was ordered on patients at time of admission and routinely while admitted.[1,2]
- Several authors present formal COVID test menus including osmolality to enable early detection and differential diagnosis of electrolyte disorders.[3-14] Alberta Health Services provides guidance for hyponatremia, developed by their COVID-19 educational team, which includes osmolality testing at the time of and during patient admission.[15,16]
- It is important to quickly and appropriately treat electrolyte disorders.



CONSIDERATIONS FOR CLINICAL LABORATORIES

• Now more than ever, it is critical that clinical laboratories have an up to date osmometer on-site to ensure they can quickly turnaround osmolality results on patients with known or suspected COVID-19.

• Laboratories should be prepared for an increase in osmolality test orders as the association between COVID and electrolyte disorders becomes widely realized.

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