

NMA/AGSM/2022/BCS/003 - Hypokalemia and its Correlates among Nigerian SARS-CoV-2 Infected Patients

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Abstract

Background: Disorders of plasma potassium are common among patients of western populations with SARS-CoV-2 infection which reportedly underlies worse clinical outcomes of the disease. Hence, the current study evaluated the pattern of potassium disorders and their clinical correlates among Nigerians with SARS-CoV-2 infection.

Methodology: Retrospective data of eligible adult patients managed at the Eleme COVID-19 treatment center in Port Harcourt during the 2020-2022 period following a positive real-time RT-PCR test from a nasopharyngeal swab were enrolled for this study. Baseline data were retrieved from medical files/notes by research assistants using extraction templates and analyzed accordingly.

Results: Hypokalemia was recorded in 323(62.8%) subjects out of 515 eligible subjects. Mild, moderate, and severe hypokalemia was recorded among 32(9.9%), 219(67.9%), and 72(22.2%) subjects, respectively. Subjects with severe hypokalemia had higher systolic blood pressure (SBP), CRP, D-dimer, and neutrophil count, but lower albumin levels, lymphocyte, and platelet counts compared to those with mild-moderate hypokalemia ($p < 0.05$). Inverse relationships existed between potassium and SBP, sodium, CRP, D-dimer, and neutrophil count while a positive relationship existed with albumin, lymphocyte counts, platelet counts, and oxygen saturation among subjects with hypokalemia ($p < 0.05$). Compared to those with mild-moderate hypokalemia, those with severe hypokalemia were associated with severe SARS-CoV-2 infection (OR: 5.671; [95%CI:4.467-7.365]; $p < 0.001$) and unfavorable clinical outcomes (OR:7.863; [95%CI:6.502-9.342]; $p < 0.001$).

Conclusion: The findings suggest a high frequency of hypokalemia in association with severe infection and unfavorable clinical outcomes among studied subjects with SARS-CoV-2 infection. These findings should be considered during their clinical management. However, further studies are recommended to verify the conclusions of this study.

Keywords: Hypokalemia; Serum Potassium; SARS-CoV-2; Correlates.

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