

ABSTRACT

**Comparison of Glucose Meters at Al-Adan Hospital Kuwait.**

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**Methods:** This study evaluated venous blood samples for the in-vitro effect of interfering substances on analytical performance of two hospital POC glucose meters, Abbott Xceed & Nova Biomedical StatStrip meter, compared to the reference laboratory method (Roche Cobas 8000)

**Results:**

**Hematocrit interference:** Across all hematocrit and glucose ranges the accuracy errors for Xceed was seen to be 21-30% which was seen at both low and high haematocrit levels over multiple glucose levels, however the StatStrip error was <5% across all ranges.

**Ascorbic acid:** At low glucose levels, the Xceed had a severe Ascorbic Acid accuracy error range of 50-60% when compared to the reference method. At high and very high glucose levels the accuracy was better at 10-15%. Comparatively StatStrip did not show any accuracy issues with ascorbic acid as the interferent.

**Acetaminophen:** Across all glucose and acetaminophen interference ranges, both the meters did not show direct interference effects, however there was a significant bias seen with the Xceed.

**Method Comparison (Correlation to Clinical Lab Reference Method)**

The Xceed demonstrated correlation coefficient (R<sup>2</sup>) of 0.941 a slope of 0.804, and an intercept of 0.511, with an accuracy error of about 14% overall. The StatStrip showed a correlation coefficient (R<sup>2</sup>) of 0.995, a slope of 1.003, and an intercept of -0.257, with an accuracy error of 3.6% overall.

**Conclusion:** The data showed that StatStrip correlated well with the reference method and seemed to be free from the tested interferences and would be able to comply with the new ISO and CLSI guidelines