COMPARISON OF SPERM MOTILITY MEASUREMENT USING SQA-V AUTOMATED SPERM ANALYZER AND CONVENTIONAL MANUAL METHODS

R. K. Sharma, T. M. Said, A. Agarwal; Cleveland Clinic Foundation, Cleveland, OH

Objective: The accuracy of manual sperm motility assessment is affected by a variety of factors. Automated systems may be a potential alternative to conduct an accurate semen analysis. The aim of our study was to evaluate the SQA-V device as an automated tool for the assessment of sperm motility. Design: Double-blind prospective study Materials and Methods: Semen samples (n = 50) collected from healthy subjects were analyzed microscopically for sperm motility by two independent operators using WHO 1999 guidelines. Semen samples were analyzed in parallel using the automated sperm quality analyzer (SQA-V; Medical Electronic Systems, Ltd., Caesarea Industrial Park, Israel). The instrument analyzes the analog signals generated by light detectors of motility and concentration channels. All semen samples were analyzed within 1-2 hours after collection at room temperature. For SQA-V measurements, disposable capillaries were filled with semen samples and analyzed according to the instrument user guide and the onscreen instructions. The standard "true values" of motility were established as an average of results obtained by the manual data of two independent operators and that of the analyzer. Manual and automated results were plotted versus these standard values in Bland and Altman plots. Results: As shown in the figure, the mean of the differences between motility measured by the SQA-V device and the established standard values was -3.9% and the majority of the data points were evenly spread within quite a narrow 95% confidence interval (1.96 standard deviations). The mean values of the differences between motility measured manually by 1st and 2nd operators and the established standard values were higher (1.9% and 5.6% respectively). The 95% confidence intervals of motility assessed manually were wider than those measured automatically (1st operator: from -16.5% to 20.4%; 2nd operator: from -9.7% to 21%). The correlation coefficient of motility measured by the SQA-V versus the established standards was 0.82, while the sensitivity and specificity were 70.0% and 92.5% respectively. **Figure.** Bland and Altman plot of sperm motility assessed using SQA-V device.
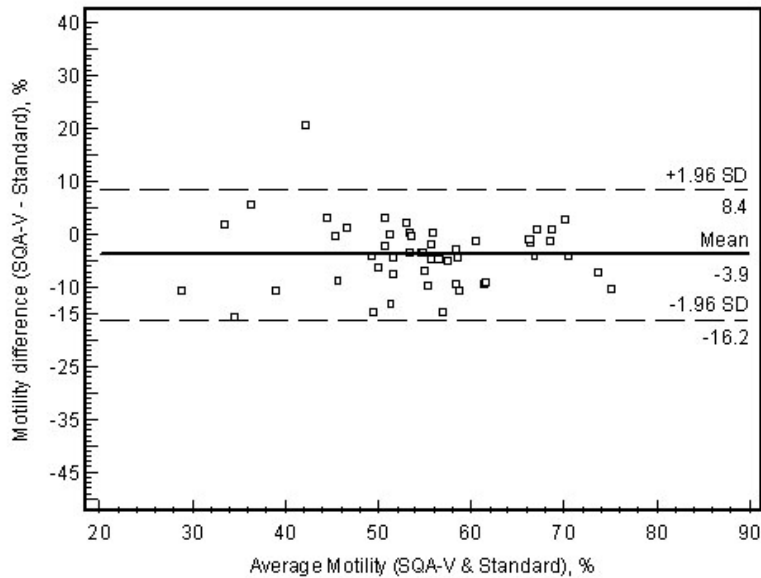
Conclusion: The conventional manual method of motility assessment is prone to overestimation. Motility results from the SQA-V device strongly correlate with the established standard values providing high sensitivity and specificity. The SQA-V is an efficient tool for rapid assessment of sperm motility. Support: None

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