QUALITY CONTROL OF MEASUREMENT OF THE TOTAL ANTIOXIDANT CAPACITY (TAC) OF SEMINAL PLASMA BY COLORIMETRIC ASSAY
N. Kattal, A. Gupta, A. Agarwal, R. Sharma, J. Thornton,
Cleveland Clinic Foundation

Measurement of seminal TAC is a useful tool in the evaluation and follow-up of infertile men. The enhanced chemiluminescence assay has been used widely for the measurement of seminal TAC levels. A much more convenient and cheaper colorimetric method has been described previously for other biological fluids. The assay depends upon the suppression of a color producing reaction by antioxidants. The aim of our study was to assess the intra-assay, inter-assay, intra-observer, and inter-observer variability of the colorimetric assay for the estimation of seminal TAC. Seminal plasma separated from 17 unselected men attending the andrology laboratory was assessed for its TAC. The test was done in duplicate by the same observer to calculate the intra-assay and the intra-observer variability. Eight aliquots of the seminal plasma of the same patient were assessed for their TAC, by 2 observers (4 times each), to calculate the inter-assay and the inter-observer variability. There was high level of agreement between the duplicate measures by the same observer (intra-observer & intra-assay variability) with a concordance correlation coefficient of 0.99. The inter-assay coefficient of variation was 4.7%. The mean ± SD of the % difference between the 2 observers was 2.98 ± 4.1%. We can therefore conclude that the colorimetric assay is a reliable, accurate, and simple method for the estimation of the seminal TAC.