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"The method of choice in measurement of microproteinuria in developing countries "

"Khatami Z, Roohi S, Nami A, Shakeri N, Abbassi M "

Abstract:

Introduction: In this study, we reviewed and compared three routine methods for the measurement of urinary protein concentrations with a view to find a suitable method to prevent, diagnose and monitor renal disease under circumstances with limited resources. Materials and Methods: Two modifications of the Trichloroacetic acid (TCA) turbidimetric method read at 405 and 620 nm and the sulfosalicylic acid (SSA) turbidimetric method were considered. The reviewed was carried out using a variety of control materials, calibrators and patients urine samples. Results: The result indicated that the TCA method read at 405nm is appropriate for the measurement of protein in the range of 25-700 mg/L and the TCA "620nm method" is appropriate for the measurement of protein concentration in the range of 100-1000 mg/L. Of the two methods, the TCA at 405 nm was minimally influenced by the type of calibrator. The SSA method showed unacceptable performance in the measurement of protein, specially at lower concentration, in addition the results showed a large variation depending on the type of calibration. Conclusion: For screening of high-risk populations e.g. diabetics and early diagnosis of microproteinuria the recommended method is the TCA at 405 nm calibrated with a serum-based mixed Albumin/Globulin standard. For routine testing the TCA method at 620 is suggested regardless of type of calibration, although the limitations at lower concentrations should be remembered.

Keywords:

Trichloroacetic acid method . Urinary protein . Turbidimetric method

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