
**Objective**

To assess the accuracy of urinary albumin concentration (UAC) and urinary albumin-to-creatinine ratio (UACR) in a random urine sample (RUS) as a screening test for microalbuminuria and macroalbuminuria in patients with non-insulin-dependent diabetes mellitus (NIDDM).

**Design**

Comparison of UAC and UACR with 24-hour urinary albumin excretion rate (UAER) using receiver-operating characteristics (ROC) curves.

**Setting**

Diabetes clinic in a tertiary care center in Brazil.

**Patients**

93 patients (mean age 61 y, 52% women) who had NIDDM (mean duration 11 y). Exclusion criteria were cardiac failure or renal tract disease other than diabetic nephropathy.

**Main results**

All patients completed a 24-hour urine collection for UAER. The next morning they came to the clinic and an RUS was taken for UAC and UACR measurements. Urinary albumin was measured in duplicate by immunoturbidimetry. One hundred twenty-three 24-hour urine collections with creatinine measurements between 700 and 1800 mg were used as the diagnostic standard.

**Main outcome measures**

ROC curves were constructed to analyze the performance of RUS measurements (UAC and UACR) as screening tests for microalbuminuria (UAER 20 to 200 µg/min) and macroalbuminuria (UAER > 200 µg/min). 2 cut points were determined: the first point with a sensitivity of 100%, and the RUS value that maximized both sensitivity and specificity.

**Conclusion**

Using UACR rather than UAC as the preferred screening test, microalbuminuria was an accurate and cost-effective screening tool. However, some caveats are noted. First, the range of urine volumes from which the UAC was determined was not provided; second, it was not clear how many eligible patients did not participate and, if they did not, for what reasons; and third, the RUSs were not truly random because they seemed to have been collected in the morning and not at other times. Nevertheless, these results suggest that the simpler spot UAER on a morning RUS may be as valid a screening test as the UACR.

For now, I will continue to use the UACR on an RUS in judging which patients need to have their UAER measured and which can be left for another year. However, confirmation of the results of this study would make me seriously reconsider the UAC as the preferred screening test.

**Reference**

Albumin measurements in a random urine sample accurately screened microalbuminuria and macroalbuminuria in NIDDM

*Evid Based Med* 1997 2: 189
doi: 10.1136/ebm.1997.2.189

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