Kidney

8.3 Which is the Best Cut-Off for the Definition of Microalbuminuria Using a Timed Urine Collection? Results in an Adult Sample of Male Population

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Introduction There is not agreement as to the best technique and the ideal cut-off of microalbuminuria (MA), an early marker of organ damage in patients at increased risk for chronic kidney diseases (CKD), as those with hypertension, diabetes, cardiovascular disease and a family history of CKD, in particularly in the male population.

Methods. A sample of 936 adult men (mean±SD age: 59.7± 6.5 years) participating in the 2002-04 Olivetti Heart Study (OHS) follow-up examination, consecutively completed a 24-hour and a morning timed urinary collection, following a carefully standardised protocol. After the exclusion of participants affected by macroalbuminuria, in the 900 remainders, MA was defined as albuminuria >30 mg/24h in the 24-hour collection and >30 mg/L in the timed collection. Using the timed urinary collection, albumin/creatinin (A/C) ratio was also determined and MA alternatively defined as an A/C ratio of >20mg/g or >30mg/g. The 24-hour urine collection was considered the gold standard.

Results. 69.7% of participants were hypertensive and of them 329 (36. 6% of the total population) were on antihypertensive treatment. 13.2% (n=329) were diabetic. Mean albumin values were (mean (95% C.I.)) 17.1 mg (15.1-19.1) and 5.8 mg/L (5.0-6.7), respectively, in the 24-hour and the timed urine collection. Using the A/C ratio, the mean value resulted 12.4 mg/g (10.8-13.9). The table reports the main results of the analysis.

	Sensitivity	Specificity	PPV	NPV
A/C ratio (cut-off: 30 mg/g)	53 (44-63)	98 (97-99)	77 (67-86)	93 (92-95)
A/C ratio (cut-off: 20 mg/g)	72 (64-81)	93 (91-95)	60 (52-69)	96 (94-97)
Albuminuria: 20 mg/L	45 (36-54)	99 (36-54)	87 (78-95)	92 (91-94)

Conclusions. Compared with the 24-hour albumin excretion, all the tests based on timed urine collection, despite good specificity, were affected by weak sensitivity, an important feature for a screening test. The best performing test was the A/C ratio with the lower cut off (i.e. 20mg/g).