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**–to: Wu AYT, Kong NCT, de Leon FA, Pan CY, Tai TY, Yeung VTF,
Yoo SJ, Rouillon A, Weir MR, for the MAPS investigators (2005)
An alarming high prevalence of diabetic nephropathy in Asian type
2 diabetic patients: the MicroAlbuminuria Prevalence (MAP)
Study. Diabetologia 48: 17–26**

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To the Editor: Wu et al. [1] studied the prevalence of albuminuria in 5,549 Asian type 2 diabetic patients. The reported prevalence of microalbuminuria in this group, 39.8%, is remarkably high; higher than the prevalence reported in other populations [2]. However, it should be noted that the method used to identify microalbuminuria in this study was a semi-quantitative test (Micral test; Roche Diagnostics, Mannheim, Germany), which is considered a screening, but not a diagnostic, test for microalbuminuria. We speculate that, in the study of Wu et al., the prevalence of microalbuminuria in Asian type 2 diabetes was over-estimated given high false-positive rate of the Micral test.

At this centre, we compared the diagnostic accuracy of the Micral test with that of the standard RIA in 196 diabetic patients [3]. The Micral test showed a high sensitivity (98.9%) and a high negative predictive value (98.6%); however the specificity (68.6%) and the positive predictive value (73.2%) of the test were not as good. Thirty-three of the 105 patients who were negative for microalbuminuria (urine albumin concentration <20 mg/l) according to the RIA were positive according to the Micral test. If this false-positive rate is applied to the study of Wu et al., the prevalence of microalbuminuria is reduced from 39.8 to 29.1%. In the Discussion section of their paper,

the authors state that a within-trial validation of the Micral test was performed [1]. The results of the test were compared with those of an immunochemical assay (DCA 2000+commercial kit; Bayer Diagnostics, Germany) in 119 patients and with those of an immunoturbidimetric assay (Beckman Array 360 system; USA) in 56 patients (unfortunately, this sample size is inadequate to give a valid result). The sensitivity and the specificity of the Micral test were 91.9 and 63.4%, respectively, as compared with the DCA 2000+ commercial kit (values close to our results), and 95 and 80%, respectively, as compared with the immunoturbidimetric assay. At best, the positive predictive value of the Micral test would be 82.6%, which would result in the reduction of the prevalence of microalbuminuria to 32.9%.

Furthermore, the timing of urine collection may also affect the test result. At this centre, we performed a study that was designed to compare the value of first morning and random morning (void at outpatient clinic visit) urine samples for the determination of microalbuminuria in type 2 diabetic patients. Using the 24-h AER as a reference, it was demonstrated that the cut-off point for microalbuminuria (based on receiver operating characteristic curve analysis) is higher in random morning samples than in first morning samples, regardless of whether this is expressed in terms of albumin concentration or the albumin : creatinine ratio [4]. In agreement with the recommendations of the American Diabetes Association, the cut-off point for microalbuminuria in the first morning sample was 18.7 mg/l or 27.4 mg/g creatinine. However, in the random morning sample, the cut-off point was 34.1 mg/l or 41.2 mg/g creatinine. Thus, the prevalence of microalbuminuria may be over-estimated if a random morning urine sample is used. In their paper, Wu et al. [1] do not state the proportion of urine samples that were random morning samples, but I speculate that it could have been the majority given the cross-sectional nature of the study. It is my opinion that, in view of the above-mentioned limitations, the high prevalence of microalbu-

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minuria in Asian type 2 diabetic patients reported by Wu and co-investigators needs to be confirmed using a more specific method.

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