



Microalbuminuria Detection: The Future Challenges

Monu Kumari, Deepak Kumar and Dibyajyoti Banerjee*

Department of Experimental Medicine and Biotechnology, PGIMER, Chandigarh, India

*Corresponding Author: Dibyajyoti Banerjee, Department of Experimental Medicine and Biotechnology, PGIMER, Chandigarh, India.

Received: June 26, 2019; Published: July 01, 2019

DOI: 10.31080/ASMS.2019.03.0334

Albumin in the range (30-300 mg/day) when found to be excreted in urine is popularly known as microalbuminuria. It is a sign of a start up to certain renal diseases, and recognised as a biomarker of diabetic nephropathy [1].

It is demonstrated that nearly half of the type 2 diabetic patients had microalbuminuria and eventually they develop diabetic nephropathy [2,3].

So it becomes important to increase the accessibility to microalbuminuria detection at point of care which can act as a whistle blower for prevention of complications of diabetes.

There are different methods which are being used for microalbumin detection including dye binding methods, immunochemical assays, HPLC based, and spectroscopic methods. Dye binding methods and immunochemical methods are popular point of care methods for microalbumin detection. The dye binding methods are less specific while the immunochemical methods are less sensitive for the purpose. Both of these methods does not work well at the lower range of detection. Therefore innovative methods are in its way to solve this problem [4-11].

Keeping these facts in mind we feel that more basic research is required at the present moment to solve the problems of microalbuminuria detection at point of care.

Bibliography

1. HH Parving, *et al.* "Early detection of patients at risk of developing diabetic nephropathy. A longitudinal study of urinary albumin excretion". *Endocrinology* 100 (1982): 550-555.
2. Khadka B, *et al.* "Prevalence and Factors Associated with Microalbuminuria among Type 2 Diabetic Patients A Hospital Based Study". *Journal of Nepal Medical Association* 56.209 (2018): 516-521.
3. Kundu D, *et al.* "Relation of microalbuminuria to glycosylated hemoglobin and duration of type 2 diabetes". *Niger Journal of Clinical Practice* 16.2 (2013): 216-220.
4. T Uen, *et al.* "The bromocresol green assay, but not the modified bromocresol purple assay, overestimates the serum albumin concentration in nephritic syndrome through reaction with α 2-macroglobulin". *Annals of Clinical Biochemistry* 53 (2016): 97-105.
5. BT Dumas, *et al.* "Serum and urine albumin: a progress report on their measurement and clinical significance". *Clinica Chimica Acta* 258 (1997): 3-20.
6. BT Dumas, *et al.* "Origins of dye-binding methods for measuring serum albumin". *Clinical Chemistry* 55 (2009): 583-584.
7. PG Hill. "The measurement of albumin in serum and plasma". *Annals of Clinical Biochemistry* 22 (1985): 565-578.
8. CM Clase, *et al.* "Conversion between bromocresol green- and bromocresol purple-measured albumin in renal disease". *Nephrology Dialysis Transplantation* 16 (2001): 1925-1929.
9. DD Coley-Grant, *et al.* "The impact of change in albumin assay on reference intervals, prevalence of 'hypoalbuminaemia' and albumin prescriptions". *Annals of Clinical Biochemistry* 53 (2016): 112-116.
10. Simon Thompson, *et al.* "The bromocresol purple method of albumin measurement significantly underestimates the serum ascites albumin gradient". *Journal of Internal Medicine* 48.11 (2018): 1412-1413.
11. Kumar D, *et al.* "Methods of albumin estimation in clinical biochemistry: Past, present, and future". *Clinica Chimica Acta* 469 (2017): 150-160.

Volume 3 Issue 8 August 2019

© All rights are reserved by Dibyajyoti Banerjee, *et al.*