



آغا خان یونیورسٹی ہسپتال

The Aga Khan University Hospital

# THE AGA KHAN UNIVERSITY HOSPITAL CLINICAL LABORATORIES

## UPDATE URINARY ALBUMIN EXCRETION RATE (AER)

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### INTRODUCTION:

Urinary albumin excretion is used to screen for early kidney disease in patients at risk of kidney injury, such as high blood pressure or diabetes. Urinary albumin excretion rate (AER) is defined as excretion of albumin in urine over a specified period or defined period of time (for example in 2-24 hrs). AER is the rate of albumin excretion per minute ( $\mu\text{g}/\text{min}$ ), calculated by:

$$\text{AER} = \frac{\text{Albumin (mg/dl)} \times \text{volume of urine in timed urine collection (dl)} \times 1000}{\text{Time of urine collection (min)}}$$

Microalbuminuria, defined as urinary excretion of albumin of 20-200  $\mu\text{g}/\text{min}$  in timed urine sample, is a predictor of nephropathy and is usually the first indication of kidney injury in diabetic patients. So monitoring of albuminuria is recommended in all patients having diabetes, hypertension and kidney diseases. The National Kidney Foundation guidelines for the management of patients with diabetes and microalbuminuria recommend that all type 1 diabetic patients older than 12 years, and all type 2 diabetic patients younger than 70 years have their urine tested for microalbuminuria yearly when they are under stable glucose control.

### PRINCIPLE:

Urine albumin is analyzed by Immunoturbidimetric methodology

### SPECIMEN REQUIREMENTS:

A sample of urine has to be collected over a specified period of time (2 hours-24 hours). At the beginning of the time period, bladder should be emptied and urine should be discarded. Now the time should be noted and urine collection can be started. All the urine voided for the specified period of time should be collected in the container provided. At the end of the time period, bladder must also be emptied in the container.

### REFERENCE RANGE:

Normal:  $<20 \mu\text{g}/\text{min}$

Microalbuminuria:  $20-200 \mu\text{g}/\text{min}$

Macroalbuminuria:  $>200 \mu\text{g}/\text{min}$

LIMITATIONS: Because of variability in urinary albumin excretion, two of the three specimens collected within a 3 to 6 month period should be abnormal before diagnosis of microalbuminuria.

SCHEDULE: Next day reporting.

PLEASE FILE FOR QUICK REFERENCE

