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# Pediatric Care 2018: Does micro albuminuria level correlate with PRISM and PELOD scores in critically ill children and prediction of mortality - Karan Raheja - Sir Ganga Ram Hospital

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**Introduction:**
Microalbuminuria is characterized as levels of albumin going from 30 to 300 mg in a 24-h urine collection. Clear albuminuria, macroalbuminuria, or proteinuria is characterized as a urinary albumin discharge of ≥300 mg/24 h. Urinary albuminuria involves 20–70% or urinary complete protein excretion. Estimating urinary albumin excretion by dipstick without at the same time estimating creatinine is dependent upon false negative and false positive outcomes because of variations in urine concentration brought about by hydration level. Although urinary dipsticks are acceptable for quick screening, other progressively exact estimations ought to be done to measure urinary albumin discharge rates (AERs). Albuminuria can be estimated in a few different ways estimation of albumin to-creatinine ratio (ACR) in a random or first morning spot collection, 24-h urine assortment with estimation of creatinine to verify adequacy of the collection, and coordinated (4-h or overnight) pee assortments. In spite of the fact that the 24-h urine collection would beat issues of diurnal variety in albumin discharge, it is dependent upon assortment blunders. The Kidney Disease Outcomes Quality Initiative rules express that ACR estimation in a first-morning spot urine collection is satisfactory and a planned urine collection isn't important. Be that as it may, on the grounds that ladies discharge less creatinine than men and microalbuminuria depends on a fixed measure of urinary albumin discharge every day, the meanings of microalbuminuria are diverse in people when utilizing ACRs.

Microalbuminuria was first characterized by Mogensen and others as 30–300 mg urinary albumin discharge per 24 h. Be that as it may; at that point, there was not boundless utilization of inhibitors of the renin angiotensin framework. As noted underneath, restraint of the renin angiotensin framework diminishes urinary albumin discharge, and medications to repress the renin angiotensin framework are as of now in wide use. Micro albuminuria (MA), a sub-clinical increase in urinary albumin, is a recognized marker of systemic inflammation, and is thought to reflect the glomerular component of a systemic capillary leak. Previous research has shown that sustained MA is associated with the development of organ dysfunction later on and poor outcome in adults. To date, the relationship of MA and organ system dysfunction (OSD) in critically ill children have not been systematically evaluated. The purpose of this study was to examine the relationship between MA and OSD in critically ill children.

**Methods**: Eligible subjects were patients <16 years and more one month of age, who were admitted to the PICU, and with anticipated to stay >24 hrs. Patients with primary nephropathies or gross hematuria were excluded. Microalbuminuria (ACR) were obtained from each patient at admission (ACR1), at 12hrs (ACR2) and at 24hrs (ACR3) and expressed in mcg/mg of creatinine. Cut off for significant microalbuminuria was taken as 180mcg/mg. Every day PELOD scores were determined for every patient and PRISM score at 12 and 24 hours. Connections among's PRISM and PELOD with microalbuminuria were determined. Additionally we attempted to discover survivor and non-survivor relationship with microalbuminuria.

**Results**: The sample included 138 patients, with sepsis with a median age of 38 months (range 1 to 192), median weight 13kgs (range 2.4 to 69), median PRISM score in patient with microalbuminuria levels >180mcg/mg was high 8 (range 6 to 12) in comparison to others in which levels was <180mcg/mg 4 (range 2 to 8) and median PELOD scores was high 21 (range 12 to 23) in group with microalbuminuria levels >180mcg/mg to others with levels <180mcg/mg 9 (range1 to 20). There is also statistically significant difference between types of sepsis in case of microalbuminuria at admission, 12hrs and 24hrs P=0.01 (P<0.05). Using Mann-Whitney test used for comparison between 2 groups (survivors vs. non-survivors) showed that there is no statistically significant difference between outcome in case of microalbuminuria on admission P=0.256 (P>.05). But, there is statistically significant difference between outcome in case of microalbuminuria at 12hrs P=0.037 (P<0.05) and 24hrs P=0.016 (P<0.05).

**Conclusions**: This study demonstrates a significant correlation between microalbuminuria and the degree of organ system dysfunction in critically ill children. It also suggests that rising microalbuminuria is predictive of worsening organ dysfunction and increased risk of mortality if the trends were gradually increasing. Microalbuminuria can be rapidly determined, is inexpensive, blood sparing, and it may have a role in the clinical assessment of the critically ill child.

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