RESEARCH PAPER International Journal of Medical Sciences (October, 2009 to March, 2010) Vol. 2 Issue 2 : 125-128

# Study of Urinary Microalbumin and Allied Renal Function Tests in Children with Acute Glomerulonephritis

SHAHID A. MUJAWAR, JAYASHREE V. GANU AND VINAYAK W. PATIL

See end of the article for authors' affiliation

Correspondence to :
**SHAHID A. MUJAWAR**
Department of Biochemistry, Grant Medical College and Sir J.J. Group of Govt. Hospitals, MUMBAI (M.S.) INDIA

## ABSTRACT

**Renal function assessment is important for clinical management of patients and for intervention studies. It has specific issue in children because most parameters are influenced by age, by body size, and by the level of renal function itself. In addition, technical, problem might occur owing to vascular accesses, bladder control attainment, urine collection, and other factors. The renal function tests of 30 children with acute glomerulonephritis (AGN) were assessed. The alterations of serum urea, creatinine, uric acid, sodium, potassium and also urinary urea, creatinine, total proteins, microalbumin levels in AGN children as compared to that of control group. Alteration in these tests may be because of the strong inflammatory response in the glomerular basement membrane due to streptococcal infection, other infection or other underlying diseases.**

**Key words :** Acute glomerulonephritis, Microalbumin, Renal function tests

***Accepted :*** ***July, 2009***

Acute glomerulonephritis (AGN) is the most common glomerulopathy among children. Typical features of the disease are acute onset with appearance of hematuria, edema and hypertension. In typical cases the diagnosis is easily established upon the history of antecedent streptococcal infection, acute onset of nephritic signs, transitory depression of C3 complement level, isolation of group A beta hemolytic streptococci from throat swab or pyoderma, and significant titer of streptococcal antibodies [10].

Infectious agents remain the most common cause inciting antigen associated with acute immune complex-mediated glomerulonephritis (AICGN) in which IgG and C3 are usually deposited in granular fashion along the glomerular basement membrane and in the mesangium. Most deposits disappear after a few weeks, but mesangial deposits may persist for prolonged periods. Antigens involved in the formation of nephritogenic immune complexes are thought to be the products of infectious agents (for example, nephritogenic streptococci). Glomerular immune complex deposition results in complement activation, release of vasoactive amines and activation of kinin or coagulation systems. Release of chemotactic factors results in polymorphonuclear leukocyte infiltration and acute glomerular injury [6].

This study was planned to determine concentration urea, creatinine, uric acid, sodium, potassium in serum and urea, creatinine, total proteins, microalbumin in urine in patients with AGN. The information of this marker of kidney among AGN in Western Maharashrta and would allow medical practitioners to better manage their patients to prevent complications, improve life expectancy, and quality of life.

## MATERIALS AND METHODS

In this prospective study, 30 children (mean age = 8.14 ± 2.08 years) with acute glomerulonephritis (AGN) (twenty boys, ten girls) were admitted in pediatric ward, Padmbhushan Dr. Vasantdada Patil General Hospital, Sangli and General Hospital, Miraj and composed the study group. The control group consisted of 30 children matching in age and sex without a history of acute illness or renal disease.

### *Inclusion criteria:*

Patients with symptoms and signs suggestive of AGN supported by routine investigations like Hb, CBC, ESR, blood pressure, blood sugar and urine report.

### *Exclusion criteria:*

Patients with cardiac disease, hepatic disease, diabetes mellitus, septicemia, and