

A STUDY ON CLINICAL PROFILE AND RENAL OUTCOME OF PATIENTS WITH PROTEINURIA IN PREGNANCY

Nephrology

Dr. Muthulakshmi S*

Postgraduate, DM(Nephrology), Department Of Nephrology, Government Mohan Kumaramangalam Medical College, Salem, Tamil Nadu - 636001 *Corresponding Author

Prof Dr. Nagarajan P

Hod & Professor, Department Of Nephrology, Government Mohan Kumaramangalam Medical College, Salem, Tamil Nadu – 636001

Dr. Kaaviya R

Assistant Professor, Department Of Nephrology, Government Mohan Kumaramangalam Medical College, Salem, Tamil Nadu – 636001

ABSTRACT

Introduction: Proteinuria in pregnancy is a key clinical indicator of underlying renal pathology or pregnancy-related complications such as pre-eclampsia. Early recognition and appropriate management are essential to improve both maternal and fetal outcomes. To study the clinical profile and renal outcomes of patients presenting with proteinuria during pregnancy. A prospective observational study was conducted over a period of 6 months in the Departments of Nephrology and Obstetrics. **Methods:** A total of 50 pregnant women documented proteinuria (>300 mg/24 h or spot urine protein ratio >0.3) were included. Patients with known chronic kidney disease (CKD) were analyzed separately. Demographic details, clinical features, biochemical parameters were recorded. Renal function was assessed during pregnancy and at 6 months postpartum. **Results:** Out of 50 patients mean age is 25.7 ± 4.5 , gestational week is 33.1 ± 3.7 , Proteinuria_Level (g/day) is 1.78 ± 1.27 , BP Systolic (mmHg) is 135.7 ± 12.1 , BP Diastolic (mmHg) is 87.0 ± 6.8 , Serum Creatinine (mg/dL) is 0.94 ± 0.21 , Proteinuria_6_Months (g/day) is 0.36 ± 0.18 . **Conclusion:** The study highlights that proteinuria in pregnancy is mainly observed among young women in the late second to third trimesters, with most showing mild-to-moderate proteinuria and mild hypertension. Renal function, indicated by serum creatinine, remained near normal in most cases, suggesting transient rather than irreversible renal involvement. The marked reduction in proteinuria at six months postpartum demonstrates favorable renal recovery, emphasizing that early detection and monitoring of proteinuria and blood pressure during pregnancy can prevent progression to severe pre-eclampsia or chronic kidney disease.

KEYWORDS

Proteinuria, Pregnancy, Chronic Kidney Disease, Pre-eclampsia, Renal Outcome

INTRODUCTION

Proteinuria during pregnancy is a clinically significant finding, often reflecting renal or endothelial dysfunction. While a small degree of proteinuria (<300 mg/day) can occur physiologically due to increased glomerular filtration, higher levels warrant detailed evaluation. The causes range from gestational proteinuria and pre-eclampsia to exacerbation of pre-existing renal disease.

Early recognition is vital since proteinuria is strongly linked with maternal complications (hypertension, AKI, eclampsia) and fetal complications (growth restriction, preterm birth, perinatal mortality). However, data from developing countries are limited, especially regarding postpartum renal outcomes.

This study aims to delineate the clinical profile and renal outcomes of pregnant women presenting with proteinuria.

METHODOLOGY

Screening The Study Population

The study period was from June 2024 to December 2024. All Pregnant women with proteinuria >300 mg/24 h or spot urine protein ratio >0.3 were included. Patients with active Urinary tract infection and known systemic lupus erythematosus or diabetic nephropathy prior to conception were excluded. All patients who gave consent were enrolled at the time of discharge from the hospital. Demographic, clinical, and laboratory details were collected at the time of enrollment. The study protocol was approved by the institute ethics committee.

The follow up period was 6 months. Serum Creatinine and urine spot PCR were checked during the follow up visits.

Statistical Methods

All categorical variables were expressed as frequencies and percentages and continuous variables were expressed as means with confidence intervals or median with IQR wherever appropriate. The analysis was done with IBM SPSS Statistics, V 25.

RESULTS

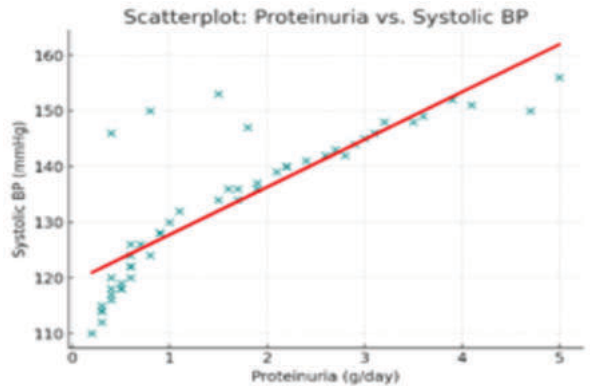
A total of 50 patients were recruited; followed up for 6 months.

The clinical characteristics of the cohort at the time of hospitalization is given in Table 1.

Table 1: Demographic And Clinical Characteristics Of Study Population (n = 50)

Parameter	Value
Mean Age	27.6 ± 4.3 years
Mean gestational age at presentation	31 ± 5 weeks
Hypertensive disorders	64%
Proteinuria	
Mild	0.7 ± 0.2 (42%)
Moderate	2.1 ± 0.6 (38%)
Severe	5.4 ± 1.2 (20%)
Mean Serum Creatinine(mg/dL)	0.94

Approximately 80% of patients showed normal renal outcomes at six months, while 20% had mild residual proteinuria. The mean serum creatinine percentage relative to the upper normal limit (1.1 mg/dL) was 85.5%, confirming preserved renal function. Among 50 patients, 2 patients had MCD(biopsy proven), 2 patients had SLE/lupus nephritis(serology and biopsy proven).



As systolic BP increases degree of proteinuria also increased.

Figure 1: Proteinuria vs. Systolic BP

DISCUSSION:

The present study underscores that proteinuria in pregnancy commonly affects young women and typically presents during the later stages of gestation. The predominance of mild-to-moderate

proteinuria with mild hypertension suggests a reversible physiological or gestational adaptation rather than chronic renal disease. The significant reduction in proteinuria at six months postpartum demonstrates renal recovery following delivery, aligning with earlier studies that highlight the transient nature of gestational proteinuria when promptly managed. Continuous antenatal surveillance and postpartum monitoring are vital to identify women at risk for chronic renal impairment.

LIMITATIONS:

The relatively small sample size of 50 patients limits the generalizability of the results to the wider population of pregnant women with proteinuria. Being a single-center study, the findings may also reflect institutional practices and regional variations in patient management. The follow-up duration of six months was relatively short and may not capture delayed or long-term renal outcomes. The absence of a control group without proteinuria limits the ability to establish causal associations between proteinuria and adverse renal outcomes. that could develop postpartum.

CONCLUSION:

Proteinuria during pregnancy, though often alarming, may not always indicate permanent renal damage. In this study, most patients exhibited transient proteinuria with normalization postpartum, emphasizing the importance of early diagnosis, blood pressure control, and close follow-up. Integrating regular renal assessments into antenatal care can prevent adverse maternal and renal outcomes.

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