



PROTEINURIA IN THE EVALUATION OF ADVERSE OUTCOMES IN WOMEN WITH SEVERE PREECLAMPSIA

Dr. Akshaya Murali, Dr. Sasirekha Rengaraj, Dr. Priyamvada PS, Dr. Sindhu Sivanandan; JIPMER Hospital, Puducherry, India

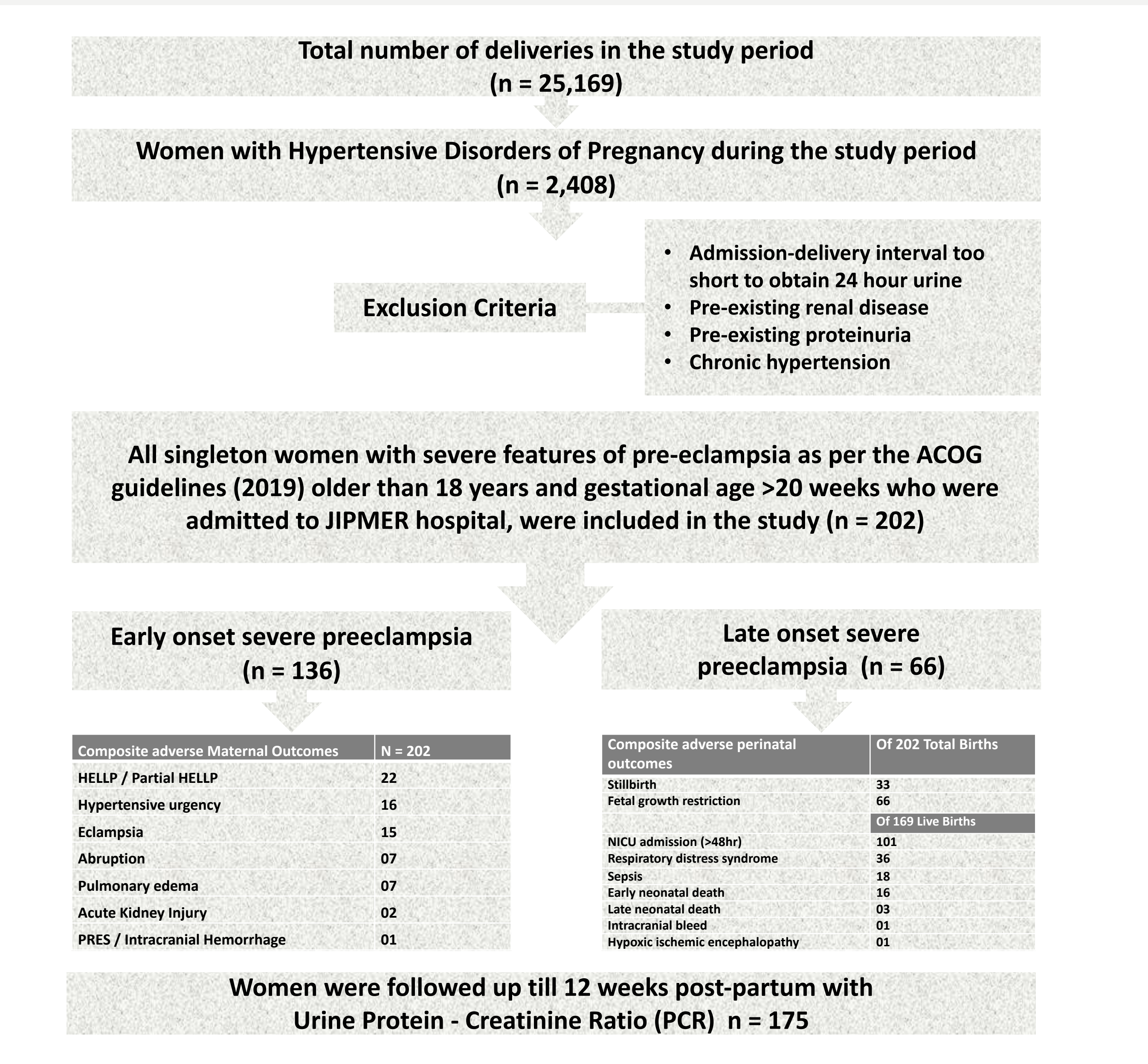
INTRODUCTION

Preeclampsia (PE) is a major cause of maternal mortality globally, with an incidence of 2-8%. It is characterized by endothelial dysfunction leading to global vasospasm and multisystem involvement, and is responsible for 16-25% of maternal deaths worldwide. Historically, proteinuria was a component for the diagnosis of preeclampsia, but is no longer considered essential for its management. Features of end-organ damage such as renal insufficiency, hepatic dysfunction, thrombocytopenia, and cerebral/visual insufficiency have been added to the criteria for the diagnosis of severe preeclampsia by the latest classification of Hypertensive Disorders of Pregnancy (HDP) by The American College of Obstetrics and Gynecology (ACOG 2019). Proteinuria was found to be consistently associated with poor perinatal outcomes, but the role of proteinuria in adverse maternal outcomes remains inconclusive.

OBJECTIVES

- To study the maternal and perinatal outcomes in different ranges of proteinuria in women with Severe Preeclampsia
- To determine the proportion of women who have persistent proteinuria postnatally.

METHODOLOGY

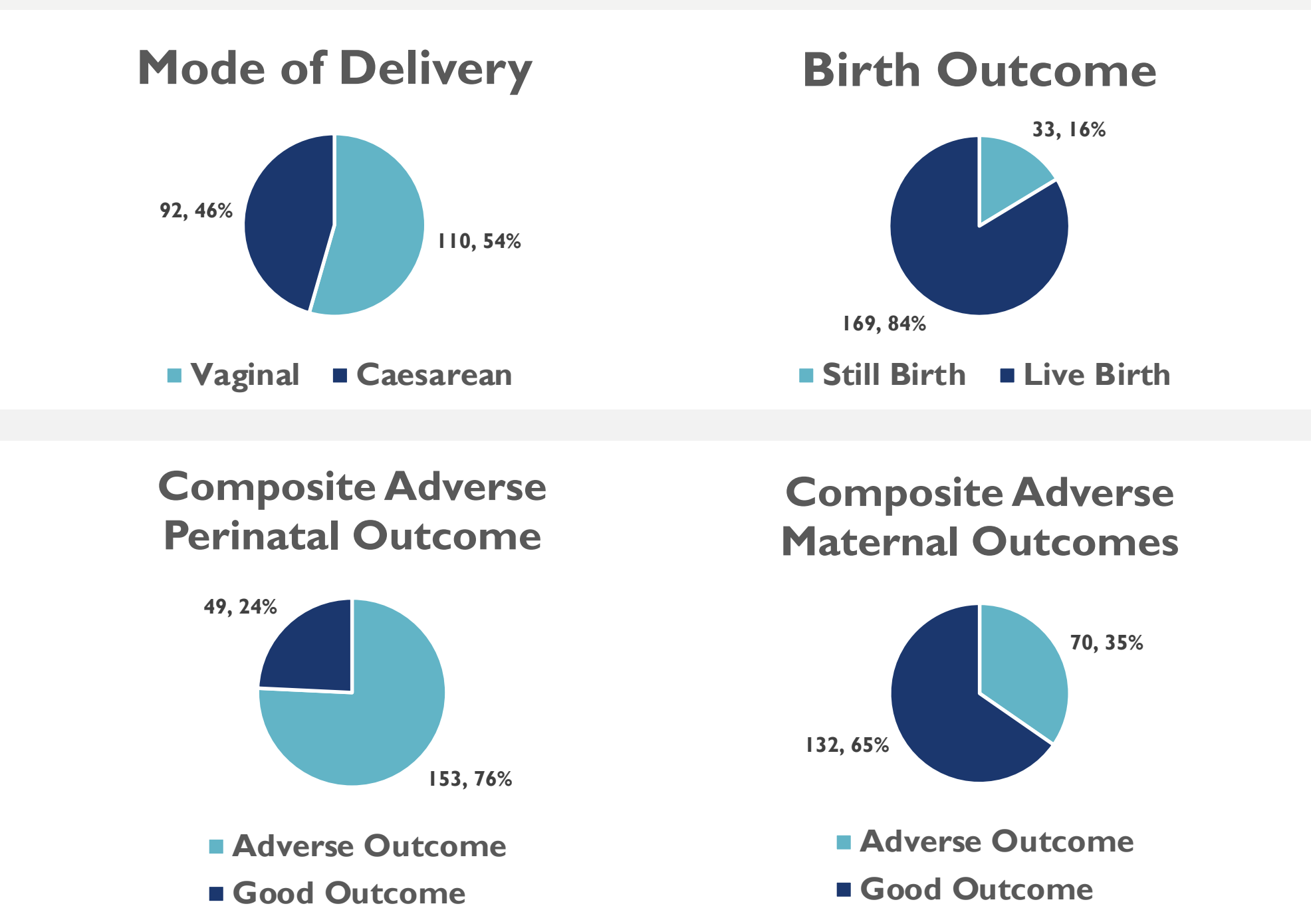


Composite adverse Maternal Outcomes	N = 202
HELLP / Partial HELLP	22
Hypertensive urgency	16
Eclampsia	15
Abruption	07
Pulmonary edema	07
Acute Kidney Injury	02
PRES / Intracranial Hemorrhage	01

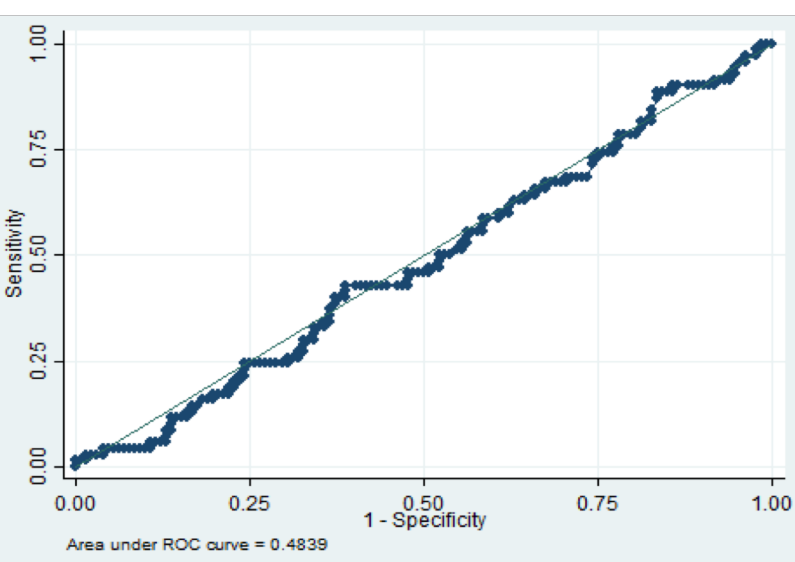
Composite adverse perinatal outcomes	Of 202 Total Births
Stillbirth	33
Fetal growth restriction	66
NICU admission (>48hr)	101
Respiratory distress syndrome	36
Sepsis	18
Early neonatal death	16
Late neonatal death	03
Intracranial bleed	01
Hypoxic ischemic encephalopathy	01

RESULTS

Patient Characteristics	Mean Value
Age (years)	26.89 ± 5.22
Nulliparity	177 (87.6%)
BMI (kg/m ²)	23.4 ± 3.70
GA at diagnosis (weeks)	32 ± 4.12
Previous H/O PE	8 (3.63%)
Previous early obstetric loss	43 (21.28%)
Chronic Hypertension	Excluded
Diabetes in Pregnancy (n)	26 (12.87%)

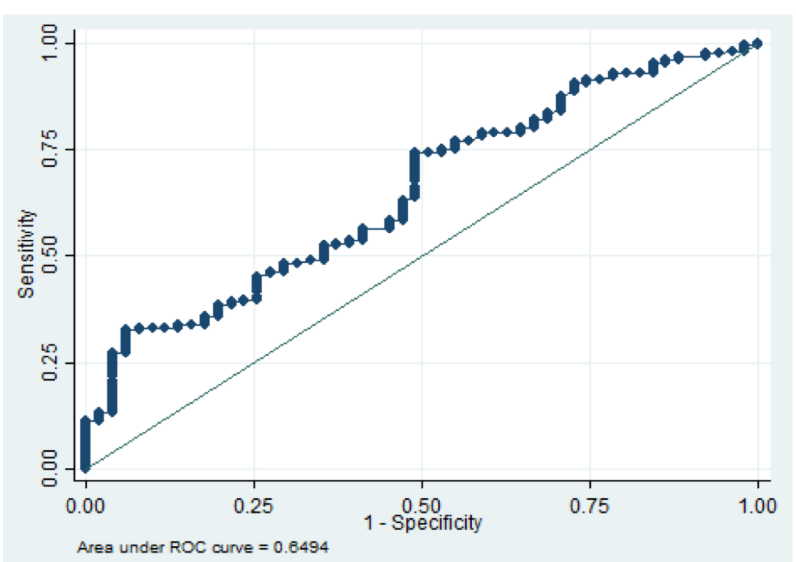


RESULTS



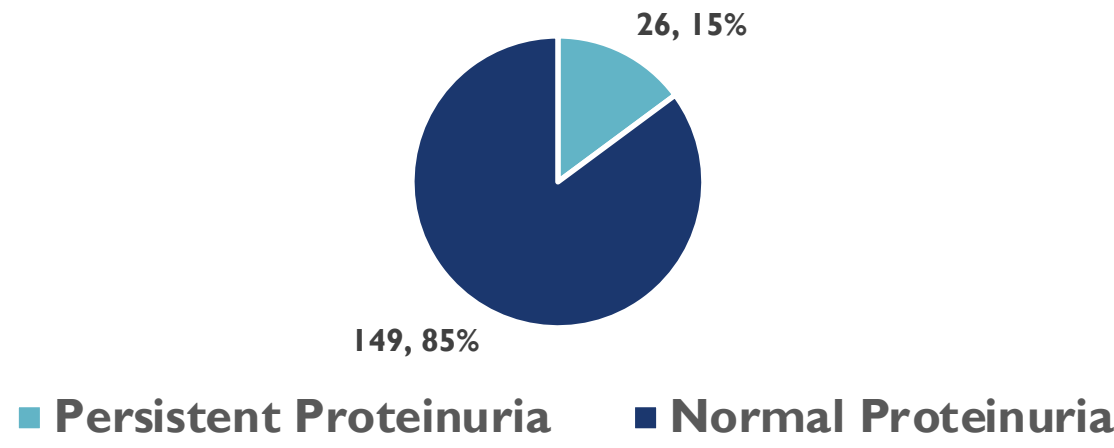
Proteinuria (mg/day)	Composite adverse maternal outcome N (%)	P value
N = 202	70 (%)	
<499 (n=36)	13 (36.1%)	0.998
500-1999 (n=39)	13 (33.3%)	
2000-4999 (n=78)	27 (34.69%)	
>5000 (n=49)	17 (34.6%)	

Proteinuria (mg/day)	Composite adverse perinatal outcome N (%)	P value
N=202	153 (%)	
<499 (n=36)	21 (13.91%)	0.002
500-1999 (n=39)	28 (17.68%)	
2000-4999 (n=78)	58 (37.90%)	
>5000 (n=49)	46 (30.46%)	



Individual Outcomes	Mild (<499mg/d) N= 36 (%)	Moderate (500 – 1999 mg/d) N= 78 (%)	Severe (2000-4999 mg/d) N= 39 (%)	Massive (>5000mg/d) N= 49 (%)	P value
Neonatal	1 (2.78%)	2 (5.13%)	5 (6.41%)	10 (20.41%)	0.02
Sepsis					
NICU admission (>48hr)	12 (33.33%)	16 (41.03%)	36 (46.15%)	37 (75.51%)	0.01

Persistent Proteinuria at 12 weeks Post-partum



Antenatal 24-hour Proteinuria N=202	Women with Persistent Proteinuria 26 (%)	Mean ± SD	Range	P value
<499 mg/day (n=36)	1 (2.78%)			
500-1999 mg/day (n = 39)	8 (10.26%)	4415 ± 4120 mg/day	480 – 15,097 mg/day	0.047
2000-4999 mg/day (n = 78)	6 (15.58%)			
≥5000 mg/day (n = 49)	11 (22.45%)			

DISCUSSION

The degree of proteinuria was related to composite adverse perinatal outcome (p = 0.002), but not composite adverse maternal outcome (p = 0.998). Individual outcomes - NICU admission > 48 hours and neonatal sepsis were found to be significantly associated with degree of proteinuria. Persistently elevated Urine PCR (>0.3) at 12 weeks postpartum was seen in 15% of the women. The value of antenatal 24-hour urine protein had a significant association with persistent proteinuria (p = 0.047) and thus is a good predictor of the same. Massive proteinuria >5g/day had an increased odds of developing persistent proteinuria (p = 0.02).

CONCLUSION

24-hour urine protein is a good predictor of adverse perinatal outcomes and persistent post-partum proteinuria. These women are at an increased risk of developing chronic kidney disease and thus require long term follow up.

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