INTRODUCTION

Proteinuria and new-onset hypertension are the classic indications and symptoms of preeclampsia, a leading cause of morbidity and mortality among mothers. Proteinuria, hypertension, and organ failure are signs of preeclampsia.

If the 24-hour urine protein total is more than 30 mg/dL, it is abnormal \(^1\). Severe hypertension occurs when the blood pressure is measured twice, at least four hours apart. The systolic reading is at least 160 mm Hg, and the diastolic reading is at least 110 mm Hg. Other criteria of proteinuria include a urine protein creatinine ratio more than 30 mg/mmol or a concentration of 30 mg/dL in two randomly selected urine specimens collected at least 4 hours apart (but within 7 days) \(^2\).

In 3 to 5% of pregnant women, this systemic sickness manifests after 20 weeks of gestation \(^3\). Pregnancy-related hypertension diseases account for over 26% of maternal fatalities in Latin America and the Caribbean, compared to 9% in Africa and Asia. 16% of maternal deaths in low-income countries are related to hypertension conditions; in high-income countries, this percentage is much too low \(^4\).
Pakistan has been reported to have an exceptionally high death rate, with 260 fatalities for every 100,000 live births. (Preeclampsia) is 20% more common in women with pregnancy-induced hypertension, according to recent research by Riaz et al.

Because (preeclampsia) may manifest atypically or when it is superimposed on another condition, the existing diagnostic criteria for (preeclampsia) may not always be useful in making the diagnosis of (preeclampsia).

The atypical instances are (signs and symptoms) of preeclampsia that emerge before 20 weeks of gestation or 48 hours after birth, without hypertension or proteinuria. The maternal spot urine protein to creatinine ratio shows potential diagnostic relevance for severe proteinuria in cases of suspected pre-eclampsia. Spot urine albumin creatinine ratio (ACR) assays employing high-performance liquid chromatography, according to Baweja et al., provide better findings in simple and early scenarios. ACR values of 35.5 mg/mmol or above may be used to diagnose (preeclampsia) in the early stages of the second trimester, before symptoms manifest.

Comparing spot urine ACR to 24-hour urine protein excretion, another research discovered that the former is a more straightforward, practical, and reliable diagnostic of severe proteinuria in pre-eclamptic individuals. In a similar vein, Park et al. have shown that the random urine protein creatinine ratio is indicative of consequential proteinuria in preeclampsia and may support its usefulness in early diagnostic data when compared to the pee dipstick test and 24-hour urine protein excretion.

Nonetheless, the most reliable method for identifying preeclampsia is the 24-hour urine-protein excretion examination. The spot urine protein-creatinine ratio’s sensitivity, specificity, and prevalence are 87.5%, 84.2%, and 74.2%, respectively, according to Mohseni et al.

The goal of the present research is to ascertain if the spot urine protein creatinine ratio might serve as a reliable, efficient, and uncomplicated indicator of (preeclampsia) in pregnant women residing in this area.

The observations will be shared with other medical professionals in the area to build or amend recommendations in the future for routine patient follow-ups about prenatal care of patients who may have (preeclampsia) risk factors.

**METHODOLOGY**

From August 24, 2014, to February 23, 2015, the Ayub Teaching Hospital in Abbottabad conducted a cross-sectional validation study in obstetrics and gynecology. In this study, 258 pregnant women were included. Patients were assessed with informed consent and hospital ethics committee approval. Every pregnant OPD patient was considered for the experiment. Patients between 20 and 40 with any gravidity and at least 20 weeks gestation were considered. Patients with essential hypertension, cardiac disease, liver dysfunction, renal dysfunction, seizure disorders, diabetes mellitus, or any combination of these illnesses were excluded.

Each study participant got a full clinical history and physical assessment. Patients submitted an early morning urine sample to measure the spot urine-creatinine ratio. Urine protein excretion was measured in each person’s 24-hour urine sample. Consultant obstetricians thoroughly oversaw patient evaluation and treatment. A leading pathologist at Ayub Medical College assessed the spot urine creatinine ratio and calculated 24-hour urine protein excretion. The 24-hour urine protein test was compared to the spot urine protein-creatinine ratio to establish accuracy.

This study’s sample size was 258 using the WHO Sample Size Determination in Health Studies software, with a spot urine protein creatinine ratio sensitivity of 87.5% and specificity of 84.2%13. The expected prevalence is 74.2%13, with a 95% confidence interval and 5% margin of error. We employed successive non-probability sampling.

Data was analyzed using SPSS 10.0. The mean ± SD was calculated for numerical parameters such as age and weeks of gestation at presentation. Category variables such as parity, preeclampsia on spot urine protein-creatinine ratio, and 24-hour urinary protein were calculated as frequencies and percentages.

**RESULT**

After eliminating potential confounding factors, 258 pregnant women were included in this study. Research individuals had an average age of 29.03±3.71 years. Patients aged 23–35 were considered. These patients had a mean gestational amenorrhoea of 28.52±4.76 weeks. The longest gestational amenor-
preeclampsia was 36 weeks, and the shortest was 21 weeks. Urine protein-creatinine ratio testing identified preeclampsia in 59 individuals (22.87%). However, 52 (20.16%) exhibited preeclampsia after 24 hours of urine protein excretion. Most research participants (20.54%) were nulliparous and (Para) 1.

The urine protein-creatinine ratio detected preeclampsia with 88.46% sensitivity and 93.67% specificity. The urine protein-creatinine ratio had 77.97% positive and 96.98% negative predictive values. Preeclampsia was diagnosed with 92.63% accuracy using the Urine protein-creatinine ratio.

Urine protein creatinine ratio and 24-hour urine protein were strongly associated (p 0.00) by age, parity, and gestational amenorrhoea. Every result is tabulated.

**DISCUSSION**

In both industrialized and developing nations, (preeclampsia) is a frequent cause of illness and death among mothers and perinatal. The only effective therapy is early delivery, which often results in premature birth. Globally, early intervention has a major influence on the health of mothers and infants.

According to this research, the urine protein-creatinine ratio has a sensitivity of 88.46% and a specificity of 93.67% in identifying preeclampsia. The urine protein-creatinine ratio had a positive predictive value of 77.97% and a negative predictive value of 96.98%, respectively. The urine protein-creatinine ratio was shown to have a 92.63% diagnostic accuracy for preeclampsia.

These outcomes are consistent with those published globally. McTaggart et al. recently reported the urine albumin creatinine ratio’s sensitivity and specificity for identifying albuminuria to be 83.2% and 80.0%, respectively. 51.2% and 95.0%, respectively, were the (positive and negative predictive) values.

Similarly, Nisell et al. discovered a robust relationship between albumin excretion levels evaluated over 24 hours and the albumin-creatinine ratio.

According to Amin et al., the random urine protein: creatinine ratio is a much more accurate test to determine proteinuria in hypertensive pregnant women than the dipstick approach. The 24-hour findings were compared to dipstick estimate and UPCR. They
discovered that, given a cutoff value of 0.45, the area under the curve for UPCR was 0.89 (95% CI: 0.83 to 0.95), indicating 82% sensitivity and a 12.5% false positive rate. Greater cutoff values (1.46 and 1.83, respectively) indicated heavy proteinuria (2 g and 3 g/24 h) \(^{16}\).

**CONCLUSION**

The spot urine protein to creatinine ratio is a quick, easy, and reliable way to identify (preeclampsia) in expectant mothers. The saved time may be put to greater use when managing pre-eclamptic patients.

**REFERENCES**


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