Spot Urine Protein:Creatinine Ratio versus 24-hour Urine Total Protein to Screen for Preeclampsia

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Objective: Our objective was to examine the accuracy of the spot urine protein:creatinine ratio using total protein in 24-hour urine specimens as the gold standard among pregnant women at risk for preeclampsia.

Methods: This was a prospective, chart review of spot and subsequent 24-hour urine tests ($\leq$ 7 days). Pearson correlation, receiver operating characteristics (ROC), and predictive values of the spot protein:creatinine ratio were calculated using total protein $\geq$ 300mg and recommended ratio thresholds ranging from 0.15 to 0.60.

Results: Of 302 spot tests over 18 months, 156 women had one set of eligible test results. Although strongly correlated (r = 0.831, p = .0001), the area under the ROC curve indicated fair accuracy [0.742(95%CI,0.665-0.819)]. Sensitivity ranged from 6.6%-90.8%; specificity from 38.8%-100%. Positive predictive value ranged from 58.5%-100%; negative predictive value from 53%-81.6%.

Conclusion: In our population, the spot urine protein:creatinine ratio is a poor screening tool for women at risk for preeclampsia during pregnancy.