12-Hour Urine Test Has Good Predictive Value for Preeclampsia

October 17, 2012
By Jamie Habib [1]

Both a 12-hour urine protein level of greater than 165 mg and a protein-to-creatinine ratio greater than 0.15 are useful tools for predicting a 24-hour urine protein level of 300 mg or greater, according to the results of a new study.

The current standard threshold value for proteinuria indicating preeclampsia in the presence of gestational hypertension is a 24-hour urine protein level of 300 mg or greater. The optimal cutoff value for proteinuria in the 12-hour sample is more than 165 mg of protein; for the protein-to-creatinine ratio, the cutoff value is more than 0.15. In the first prospective study to test these cutoff values, study authors evaluated how well a 12-hour urine protein level of greater than 165 mg and a protein-to-creatinine ratio of greater than 0.15 predicted a 24-hour urine protein level of 300 mg or higher in patients with suspected preeclampsia. Among 90 patients hospitalized for suspected preeclampsia, 28 (31%) women had a 24-hour urine protein level of 300 mg or greater. “None of the women with a 24-hour urine protein level of less than 300 mg had a 12-hour urine protein level greater than 165 mg,” wrote the study authors. However, 52% of women with a 24-hour urine protein level of less than 300 mg had a protein-to-creatinine ratio of greater than 0.15.

A 12-hour urine protein level of greater than 165 mg had high sensitivity (96%) and specificity (100%), as well as high positive and negative predictive values (100% and 98%, respectively). The protein-to-creatinine ratio had good sensitivity (89%) but poor specificity (49%). The most useful feature of the protein-to-creatinine ratio was its high negative predictive value (91%), suggesting that the best use of this test would be for “identifying patients who are unlikely to have a 24-hour urine protein level of 300 mg or greater,” recommended the study authors.

Both tests correlate significantly with 24-hour urine protein levels of 300 mg or greater in women with suspected preeclampsia. The potential benefit of these study results is that they allow for earlier diagnosis and treatment of preeclampsia. How these test results correlate with maternal and neonatal outcomes requires additional study. According to the study authors, this is the first study to test these previously reported cutoff values prospectively.

Pertinent Points:
- A protein-to-creatinine ratio of greater than 0.15 and a 12-hour urine protein level of more than 165 mg are useful tools for predicting a 24-hour urine protein level of 300 mg or greater.
- A 12-hour urine protein level higher than 165 mg has high sensitivity, specificity, and positive and negative predictive values for a 24-hour urine protein level exceeding 300 mg.
- The high negative predictive value of a protein-to-creatinine ratio of greater than 0.15 may help identify women during triage who are unlikely to have a 24-hour urine protein level of 300 mg or greater.


Source URL:
http://www.physicianspractice.com/articles/12-hour-urine-test-has-good-predictive-value-preeclampsi
a

Links: