Investigational Device May Predict Preeclampsia

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WASHINGTON — Pulse wave analysis is an investigational noninvasive technique that might help doctors identify women at increased risk for preeclampsia, results of a pilot study suggest.

A distinctive peak on the augmentation index, which is a measure of aortic stiffness, distinguishes preeclampsia from other hypertensive disorders in pregnancy, according to a poster presented by Brendan J. Smyth, M.D., at the Clinical Research 2005 meeting sponsored by the American Federation for Medical Research.

In a normal pregnancy, the augmentation index (AIx) decreases, but in this study it stayed elevated with preeclampsia, said Dr. Smyth of Georgetown University, Washington. The AIx is the ratio of augmented systolic pressure to pulse pressure, and represents factors related to arterial function.

Dr. Smyth and his colleagues presented data on 17 preeclampsia patients from their prospective, ongoing pilot study. Pulse wave analysis was used to assess women at prepregnancy and postpartum sessions or within 24 hours of antihypertensive therapy. They said those with preeclampsia had a distinctive peak in the waveform.

The mean percentage for the AIx peak in preeclampsia patients was 35%, compared with 15% for an additional 16 women with chronic hypertension, 15% for 15 women with gestational diabetes, and –6% for 8 normally healthy women.

The mean percentage was 31% for five women with preeclampsia superimposed on chronic hypertension and 30% among three with preeclampsia superimposed on chronic hypertension plus diabetes mellitus.

The AIx measurement could be used to identify women at increased risk and to prevent unnecessary hospitalization.

The pilot study was supported in part by the National Center for Research Resources.