

Postpartum blood pressure profiles of women with hypertensive disorders of pregnancy.

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Introduction: Current ACOG recommendations suggest inpatient blood pressure (BP) monitoring through 72 hours postpartum and again at 7-10 days outpatient.

Hypothesis: We hypothesized that the hypertension exacerbation might occur earlier in the postpartum period than 7-10 days postpartum.

Methods/design: A secondary analysis of a nonrandomized controlled trial of women with hypertensive disorders of pregnancy (HDP) who delivered at a single Midwestern academic center from 3/2017 to 6/2018. BP values were recorded intrapartum through 42 days postpartum using telehealth BP monitoring. Women with HDP who were controls and did not receive telehealth BP monitoring only had BPs measured intrapartum. Mean systolic and diastolic BPs were calculated for each day and analyzed. The BP profile of women who had postpartum BP $\geq 150/100$ mmHg and needed antihypertensive treatment according to ACOG guidelines was compared to women with postpartum BP $< 150/100$ mmHg ($n=116$ vs $n=98$). We also compared the BP profile of women with chronic hypertension (CHTN) to women with the new onset pregnancy related hypertension.

Results: 214 telehealth and 214 control participants were enrolled. Amongst telehealth patients 42 had CHTN, 62 gestational hypertension, and 132 preeclampsia. Mean systolic and diastolic BPs of all women with HDP decreased during the 72 hours postpartum compared to predelivery BP. Interestingly, the peak BP before delivery demonstrated a similar peak between 3rd and 7th days postpartum. Normalization of BP typically occurred by 14th day postpartum, however women with CHTN continued to have labile BPs the entire postpartum period. Women with CHTN or HDP requiring postpartum antihypertensive treatment had significantly higher mean BPs at the end point compared to their comparators ($p<0.01$ for all).

Conclusions: BP analysis shows that hypertension exacerbation is common outpatient and most often before postpartum day 7, therefore we recommend reconsideration of current guidelines including monitoring daily through the first week postpartum which can be done through home telehealth monitoring. Women with CHTN regardless of diagnosed preeclampsia exhibited exacerbated hypertension and continued to be labile through the entire postpartum period, which warrants close follow up of all CHTN women postpartum.