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Changes in Blood Pressure in a Longitudinal Cohort of Vietnamese Women

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Abstract : This study aims to study longitudinal changes in blood pressure (BP) during the 1-year postpartum period and to evaluate the influence of parity, maternal age at delivery, prepregnancy BMI, gestational weight gain, gestational age at delivery and postpartum maternal weight. A prospective longitudinal cohort study of 883 singleton Vietnamese women was conducted in Hanoi, Haiphong, and Ho Chi Minh City, Vietnam during 2015-2017. Women diagnosed with gestational diabetes mellitus at 24-28 weeks of gestation, pre-eclampsia, and hypoglycemia was excluded from analysis. BP was repeatedly measured at discharge, 6 and 12 months postpartum using automatic blood pressure monitors. Linear mixed model with repeated measures was used to describe changes occurring during pregnancy to 1-year postpartum. Parity, self-reported prepregnancy BMI, gestational weight gain, maternal age and gestational age at delivery will be treated as time-invariant variables and measured maternal weight will be treated as a time-varying variable in models. Women with higher measured postpartum weight had higher mean systolic blood pressure (SBP), 0.20 mmHg, 95% CI [0.12, 0.28]. Similarly, women with higher measured postpartum weight had higher mean diastolic blood pressure (DBP), 0.15 mmHg, 95% CI [0.08, 0.23]. These differences were both statistically significant, $P < 0.001$. There were no differences in SBP and DBP depending on parity, maternal age at delivery, prepregnancy BMI, gestational weight gain and gestational age at delivery. Compared with discharge measurement, SBP was significantly higher in 6 months postpartum, 6.91 mmHg, 95% CI [6.22, 7.59], and 12 months postpartum, 6.39 mmHg, 95% CI [5.64, 7.15]. Similarly, DBP was also significantly higher in 6 and months postpartum than at discharge, 10.46 mmHg 95% CI [9.75, 11.17], and 11.33 mmHg 95% CI [10.54, 12.12]. In conclusion, BP measured repeatedly during the postpartum period (6 and 12 months postpartum) showed a statistically significant increase, compared with after discharge from the hospital. Maternal weight was a significant predictor of postpartum blood pressure over the 1-year postpartum period.

Keywords : blood pressure, maternal weight, postpartum, Vietnam
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