Background and aims Preterm birth with very low birth weight. 
Methods We studied the association of preterm birth with 24-hour ambulatory BP and variability of BP in 42 young adults (mean age 23.2±9.3 weeks, born early preterm (24+0–36+6 weeks) in Northern Finland population. Wake and sleep period were distinguished with accelerometry in 72.4% of subjects, and for others by time (awake 9 am-11 pm, sleep 01 am-07 am).
Results Adults born early preterm had 5.6 mmHg (95% CI 1.9–9.3) higher 24-hour SBP, 2.9 mmHg (0.4–5.4) higher 24-hour DBP, 6.4 mmHg (2.8–10.1) higher awake SBP and 4.0 mmHg (0.4–7.5) higher sleep DBP when adjusted for age, sex and use of an accelerometer. Adults born early preterm had also higher within-subject standard deviation (SD) of 24-hour SBP and DBP, awake SBP and DBP and sleep DBP (Figure). Also adults born late preterm had higher SD of 24-hour DBP and sleep SBP and DBP when adjusted for age, sex and use of an accelerometer. When adjusted for maternal BMI, smoking during pregnancy and hypertensive pregnancy disorder, parental education, subject’s height and BMI, physical activity and smoking, the results were somewhat attenuated.
Conclusions Higher 24-hour ambulatory blood pressure and variability of BP may indicate that adults born early preterm are in greater risk for later cardiovascular outcomes.