

POSTER 70

ALTERATIONS IN CAROTID BAROREFLEX CONTROL OF ARTERIAL BLOOD PRESSURE DURING THE MENSTRUAL CYCLE IN YOUNG WOMEN

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Limited studies have suggested that menstrual cycle variations in sex hormones may influence arterial baroreflex control of heart rate (HR) and sympathetic nerve activity, however, results are equivocal. In addition, the baroreflex control of blood pressure (BP) has not been directly examined as pharmacological perturbations were mainly used to assess baroreflex function. Therefore, 5s pulses of neck suction (NS, -60 Torr) and neck pressure (NP, +40 Torr) were applied to load and unload the carotid baroreflex (CBR), respectively in young women during the early follicular (EF, day 1-5, low estrogen, low progesterone), late follicular (LF, day 10-12, high estrogen, low progesterone), and mid luteal (ML, day 20-24, high estrogen, high progesterone) menstrual cycle phases. Resting HR and BP were not different between the 3 phases. Similarly, HR responses to NP and NS were not significantly different between phases. In contrast, mean BP responses to NP were significantly greater in the ML phase ($\Delta 17 \pm 1$ vs. $\Delta 13 \pm 1$ EF; $\Delta 13 \pm 2$ LF mmHg; $P < 0.05$) however, responses to NS were not significantly different between phases (EF $\Delta -10 \pm 2$, LF $\Delta -10 \pm 1$, and ML $\Delta -10 \pm 1$ mmHg). These preliminary findings suggest a maintained CBR control of HR throughout the menstrual cycle whereas concomitant elevations in estrogen and progesterone selectively augment CBR-mediated BP responses to hypotension without effect on CBR responses to hypertension.

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