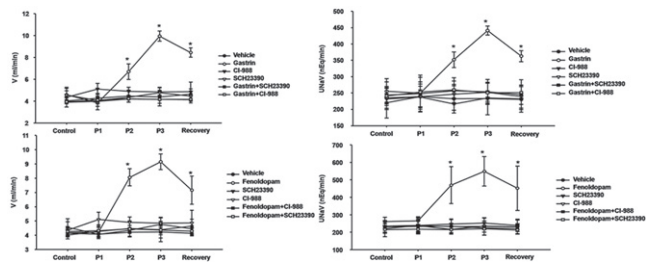


**Conclusions:** We can assume SD easily by measuring MMD as an index of day-by-day BP variability of a month. The equation formulas were very similar though the patients' groups were different. But we have to be careful how many times patients measure in a month.

**LB02.04 GASTRIN AND D1 DOPAMINE RECEPTOR INTERACT TO INDUCE NATRIURESIS AND DIURESIS**

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**Objective:** Oral NaCl intake produces stronger natriuresis and diuresis than venous infusion of the same amount NaCl, indicating the potential existence of renal-gastric axis. Gastrin, from gastrointestinal tract, is dominant one due to its natriuretic effects and taken-up by the renal proximal tubule (RPT) cells. We hypothesize that gastrin interacts with dopamine receptors in kidney, resulting in synergistically increased sodium excretion. The impaired interaction might be involved in the pathogenesis of essential hypertension (EH).



**Design and method:** Wistar-Kyoto (WKY) rats, spontaneously hypertensive rats (SHR) and RPT cells were stimulated or blocked through D1-like dopamine and gastrin receptors to observe Na<sup>+</sup>-K<sup>+</sup>-ATPase activity and natriuresis.

**Results:** Gastrin infusing WKY rats via renal artery induced natriuresis and diuresis, which was blocked in the presence of CI-988, a gastrin receptor blocker. Similarly, effect hereinbefore of Fenoldopam, a D1-like receptor agonist, was blocked by D1-like receptor antagonist, SCH23390, indicating gastrin and fenoldopam exert natriuretic and diuretic effect through individual receptors. Lower dosages of gastrin or Fenoldopam failed to induce natriuresis and diuresis alone, while putting together induced the effects. The above-mentioned effects were lost in SHRs. Natriuresis and diuresis was partially blocked by SCH23390 or CI-988, indicating the interaction between gastrin and D1-like receptor. Stimulation of either receptor increased the expression of the other and inhibited Na<sup>+</sup>-K<sup>+</sup>-ATPase activity, while the inhibitory effect of Na<sup>+</sup>-K<sup>+</sup>-ATPase activity was partially blocked through its corresponding receptors due to respective existence of SCH23390 and CI-988.

**Conclusions:** It indicated the synergistic effect between gastrin and D1-like receptor would increase the sodium excretion in WKY rats; the impaired interaction might be involved in the pathogenesis of hypertension.

**LB02.05 CONTROLLING AND LOWERING BLOOD PRESSURE WITH THE MOBIUSHD DEVICE: FIRST-IN-MAN RESULTS (CALM-FIM STUDY)**

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**Objective:** This is a multi-center (6 centers) non-randomized, first-in-man assessment of a nitinol self-expanding rectangular cuboid implant (MobiusHD) designed to increase carotid sinus arterial wall strain without impacting pulsatility or laminar flow. The geometric changes of the carotid sinus enhance baroreceptor sensitivity thus decreasing sympathetic activity and lowering BP. Patients with stage 2 resistant hypertension (3 or more antihypertensives, of which one is a diuretic, and office SBP 160 mmHg or higher), without obstructive carotid disease received a unilateral carotid sinus MobiusHD implant. Incidence of serious adverse events and unanticipated adverse device effects were collected along with changes in blood pressure (BP) measured during 1-year follow-up.

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**Results:** So far 15 patients, mean age 55 (39–76) years, of the anticipated 40 patients received a MobiusHD implant. Mean pretreatment office BP was 181/102 (±18/11) mmHg with a median of 4.5 prescribed antihypertensives (daily defined dose (DDD): 6.6) and 6 patients had failed on renal denervation. During follow-up 3 patients had serious adverse events related to procedure or device: hypotension (n = 2) and closure device failure requiring repair (n = 1). During follow-up eleven (11) patients showed significant BP lowering (i.e. more than 10/5 mmHg decrease in office BP) and 8 required reduction in antihypertensives.

Changes in DDD and BP after MobiusHD implant

	Pre-implant	Δ Day 7	Δ Day 30	Δ Day 90	Δ Day 180	Δ Day 365
Patients (n)	15	15	15	10	9	4
DDD (n)	6.6	6.4	5.7	6.1	6.5	6.9
Office BP (mmHg)	181/102	-27/-15	-21/-9	-12/-3	-19/-9	-32/-19
24-hr BP (mmHg)	155/94	-	-	-2/-1	-10/-6	-

**Conclusions:** So far, implanting the MobiusHD device in patients with stage 2 resistant hypertension seems to be safe and shows promising results in BP lowering.