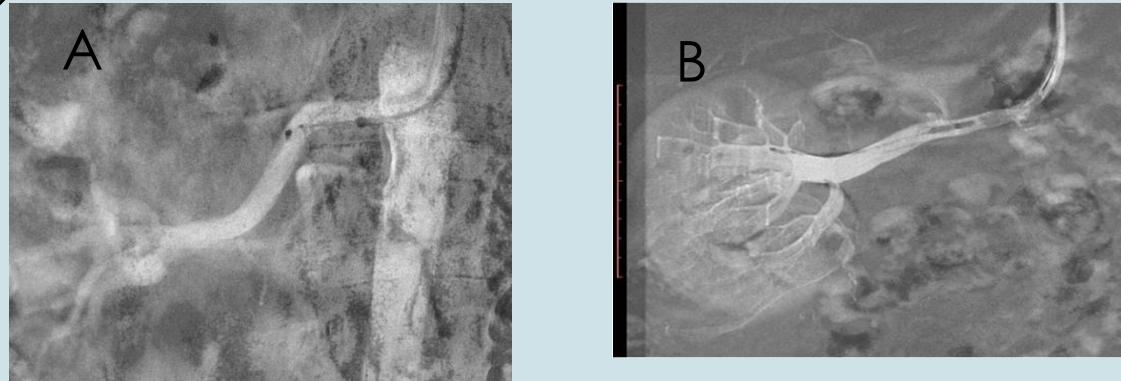


Comparison of Standard Renal Denervation Procedure versus Novel Distal and Branch Vessel Procedure with Brachial Arterial Access (Y-pattern treatment)

Acibadem City Clinic Cardiovascular Center Sofia, Bulgaria
Petrov I.; Tasheva I.; Garvanski I.; Stankov Z., Simova I.

Aims: To assess a novel approach to renal denervation, consisting of ablation beyond the proximal main renal artery and compare this approach to the standard procedure. We also assessed the safety of brachial access approach for renal denervation.

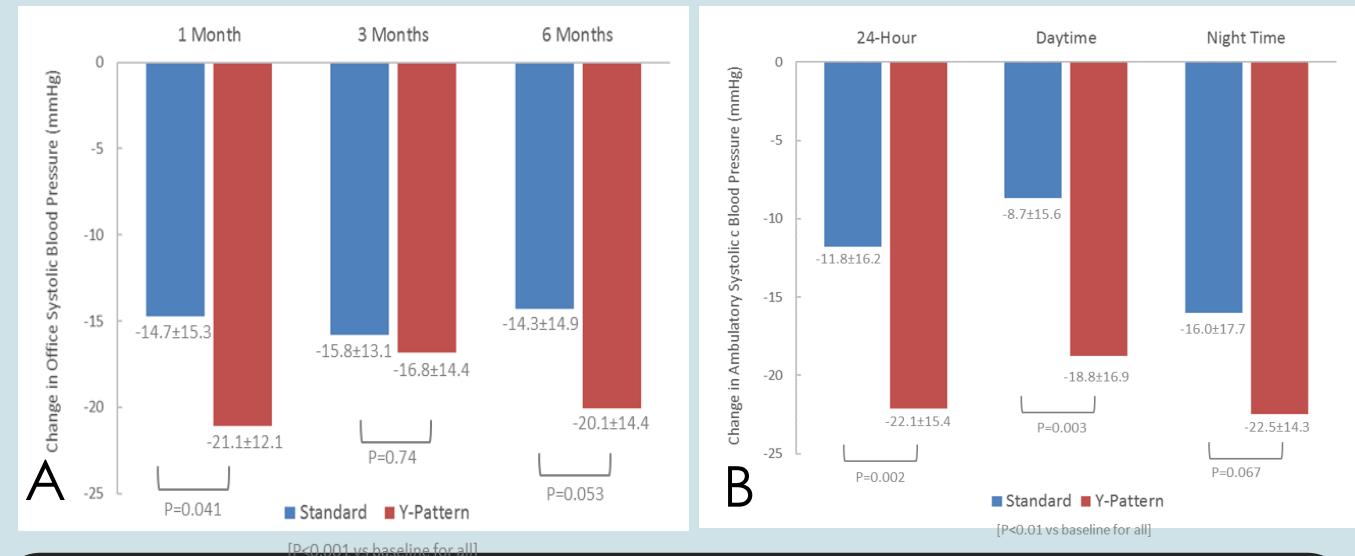


A) Standard ablation: RDN from distal to proximal applying on helicoidal pattern 3-5 points of ablation per segment. B) "Y" pattern ablation: 3 to 5 ablations in major renal artery branches on a helicoidal fashion.

Methods and results: RDN was performed on 119 consecutive patients (60 ± 13 years). In 68 of the patients femoral arterial approach was used and in 51 subjects we used brachial approach.

- 80 patients with the standard RDN, 39 patients with Y-pattern denervation.
- Technically successful renal denervation was achieved in all patients.
- Office BP levels at baseline were similar in both groups.
- Renal denervation was associated with significant decreases in both office and ambulatory SBP and DBP in both groups.
- Greater decrease in office SBP was observed in the Y-Pattern group at 1 month, but not at 3 or 6 months.

- The reduction in 24-hour mean ambulatory BP at 6 months was significantly greater for the Y-Pattern group compared to the Standard group (-22.9±15.4 vs -11.8±16.2 mmHg; P=0.002). This was associated with similar differences in daytime, but not night time SBP. Changes in diastolic office and ambulatory pressure were also greater at 6 months in the Y-pattern group. Indices of BP variability improved in both groups.



A) Change in Office Systolic Blood Pressure from baseline at 1, 3 and 6 months post ablation for the Standard denervation sub group and the Y-Pattern denervation group. B) Change 24 hour, daytime and night time mean ambulatory systolic blood pressure at 6 months post ablation

Conclusions: Y-pattern ablation is safe and resulted in significantly greater decreases in mean 24-hour ambulatory systolic and diastolic blood pressure compared to the conventional approach. Brachial artery was also shown to be feasible and safe.

	Standard	Y Pattern	P (Standard vs Y)
Antihypertensive Medication Classes	4.9±1.1*	5.3±0.8*	0.07
Total Number of Lesion†	12.0±3.0	20.4±3.9	<0.001

*P<0.05 vs. Baseline, †Lesions were counted only if producing a visible "notch" in the vessel wall on the fluoroscopic image, a decrease in impedance > 10% and a temperature > 60°C.