RENAL DENERVATION BY RADIOFREQUENCY ABLATION AS A NEW METHOD OF TREATMENT RESISTANT HYPERTENSION.

M. Bochenek[1], K. Bartus[1], B. Kapelak[1], G. Filip[1], R. Sobczynski[1], K. Wierzbicki[1], W. Zajdel [2], J. Godlewski [2], K. Zmudka[2], J. Sadowski[1]

[1] *Department of Cardiovascular Surgery and Transplantology Jagiellonian University Krakow, Poland*
[2] *John Paul II Hospital Krakow, Poland*

INTRODUCTION: Resistant hypertension is a major global public health problem. The renal sympathetic system has been identified as a major participant in hypertension pathology. Both efferent and afferent renal nerves activity have been associated with this pathology.

The aim of this study was to assess the safety and blood pressure-lowering effectiveness of renal artery denervation with a precutaneus treatment in patient suffering for the resistant hypertension.

MATERIAL AND MTHODS: The study included 45 patients. The study inclusion criteria were age more then 18 years old, systolic blood pressure 160 mmHg or more, medical therapy consisted of three or more antihypertensive medications, including a diuretic, or confirmed intolerance to medications. Also included patients had no secondary cause of hypertension and had good glomerular filtration rate.

The procedure of renal sympathetic denervation via femoral access was performed. 4 to 6 radiofrequency ablations lasting up to 2 minutes each, and of 8 watts or less, within each renal artery were done.

RESULTS: Mean blood pressure in study group before procedure was 177 systolic and 101 diastolic. Mean number of antihypertension drugs was 4,7. In patients who underwent renal denervation, the significant reduction in both systolic and diastolic blood pressure that was seen 1 month after procedure, was further reduce at 3 months, and persisted through subsequent assessments up to 12 months. Mean reduction in office blood pressure at 12 months were -27/-17 mmHg.

18 patients had control angiograms at 14-30 days after procedure and 38 patients had CTA/MRA 6 months after procedure. There was no chronic vascular complications.

CONCLUSION: Renal denervation can result in safety, significant and sustained reduction in blood pressure. In the analyzed group of patients there were no severe, chronic vascular and renal complications associated with radiofrequency ablation.

In future renal sympathetic denervation can be applied in milder forms of hypertension.