From bench to bedside: how and where to treat the renal artery?

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Potential Conflicts of Interest

I have the following potential conflicts of interest to report:

Research grants:
• Deutsche Hochdruckliga
• Deutsche Gesellschaft für Kardiologie
• Saarländisches Ministerium für Wissenschaft und Forschung

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• Medtronic, St. Jude, Boston Scientific, Cordis

Institutional grant/Research support:
• Medtronic, St. Jude, Recor, Boston Scientific
Variability to renal denervation therapy

Mahfoud F, Eur Heart J 2014
Variability to renal denervation therapy

Esler M, J Am Soc Hypertens 2014
Average lesion depth in pigs

Mahfoud F, EuroPCR 2014
Average lesion depth in pigs

Mahfoud F, EuroPCR 2014
Results of a human case study

• 36 y/o female
• Resistant hypertension since 9 years
• Ruptured dissection of the ascending aorta

Underwent bilateral RDN using Symplicity Flex 12 days before

Vink EE, NDT 2014
Renal artery and circumferential peri-arterial nerve location

Sakakura K, JACC 2014
Sweet spots to target?

Proximal

Distal

Mahfoud F, JACC 2014
Sakakura K, JACC 2014
Sweet spots to target?

Proximal

Distal

Mahfoud F, JACC 2014
Sakakura K, JACC 2014
Sweet spots to target?

Proximal

Distal

Mahfoud F, JACC 2014
Sakakura K, JACC 2014
Treatment strategies
Optimization of the treatment methodology

1. RF treatment of the **Main Artery**

2. RF treatment of each **Branch**

3. RF treatment of the **Main Artery and Branches**
Branch & main artery treatment
Highly effective in reducing renal NE

*Melder RJ, TCT 2014*
Where to treat?

Areas of renal denervation

Henegar J, Am J Hypertens 2015
Distal treatment is most effective in reducing NEPI kidney content

Henegar J, Am J Hypertens 2015
Quo vadis...
Thank you!

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