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ESC recommends patients and centres for renal denervation

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Up to 10 per cent of patients with high blood pressure are resistant to treatment, which puts them at increased risk of cardiovascular events, including heart attacks. Clinical trials show that catheter-based renal denervation reduces blood pressure in patients who do not respond to conventional drug therapy.

Use of the technique is increasing in Europe and worldwide and several national societies have published guidance on which patients with hypertension should receive treatment. The European Society of Cardiology (ESC) and the European Association of Percutaneous Cardiovascular Interventions (EAPCI) decided it was time for a European view and have developed an expert consensus document on catheter-based renal denervation.

The paper provides guidance on patient selection, centre selection, efficacy, safety, limitations and potential new indications for referring physicians, interventionalists and healthcare providers. It is published today in *European Heart Journal*, online ahead of print.1 [must confirm]

First author Dr Felix Mahfoud (Germany), said: "The hope is that insurance companies and healthcare providers will read it and will only pay for those centres and especially for those patients who fit the criteria published in the paper. The problem right now is that there are no European criteria for determining which patients are most likely to benefit and which centres have the necessary experience."

The technique involves radiofrequency ablation of the renal sympathetic nerves via a catheter. It resets renal blood pressure regulation and reduces whole body sympathetic nerve activity.

Increased activity of the sympathetic nervous system occurs in other conditions including heart failure, diabetes, arrhythmias, chronic kidney disease and obstructive sleep apnea, and pilot studies indicate that renal denervation may be an effective therapy.

Dr Mahfoud said: "We have known for decades that high sympathetic activity could be a target for treatment but until now we haven't had a way to do it. We now have a new treatment modality which allows us to reduce sympathetic activity and I'm optimistic that we will get new indications for renal denervation."

The paper states that renal denervation is currently indicated for blood pressure control in patients with treatment resistant hypertension (defined as systolic blood pressure >160mmHg or >150mmhg in type 2 diabetes) despite treatment with at least three antihypertensive drugs of different types in adequate doses, including one diuretic, and lifestyle modification. Screening should be conducted to exclude patients with secondary causes of hypertension that are potentially curable.

Centres should be specialised in the management of hypertension. At least one hypertension expert should be involved in treatment and screening and the intervention should be performed by interventional cardiologists or angiologists with training in percutaneous renal artery access. Centres should perform more than 25 renal artery interventions per year to ensure they have the required experience.

The Symplicity HTN-1 trial showed that renal denervation had a sustained blood pressure lowering effect over three years2 but longer efficacy data is needed. Dr Mahfoud said: "We treated the first patient

three years ago and so far there is no sign of renervation. Long term follow up of these patients is needed."

Trials have not investigated the possibility of reducing pill burden. Dr Mahfoud said: "Patients have to keep taking their antihypertensive medications."

More information: 1 Mahfoud F, Lüscher TF, Andersson B, Baumgartner I, Cifkova R, DiMario C, Doevendans P, Fagard R, Fajadet J, Komajda M, LeFèvre T, Lotan C, Sievert H, Volpe M, Widmisky P, Wijns W, Williams B, Windecker S, Witkowski A, Zeller T, Böhm M. Expert consensus document from the European Society of Cardiology on catheter-based renal denervation. European Heart Journal. 2013; online publish-ahead-of-print 24 April 2013. doi:10.1093/eurheartj/eht154

2 Krum H, Barman N, Schlaich M, Sobotka P, Esler M, Mahfoud F. Long-term follow-up of catheter-based renal sympathetic denervation for resistant hypertension confirms durable blood pressure reduction. J Am Coll Cardiol. 2012;59(13):E1704.

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