Appendix 1: Search strategy
Ovid SP

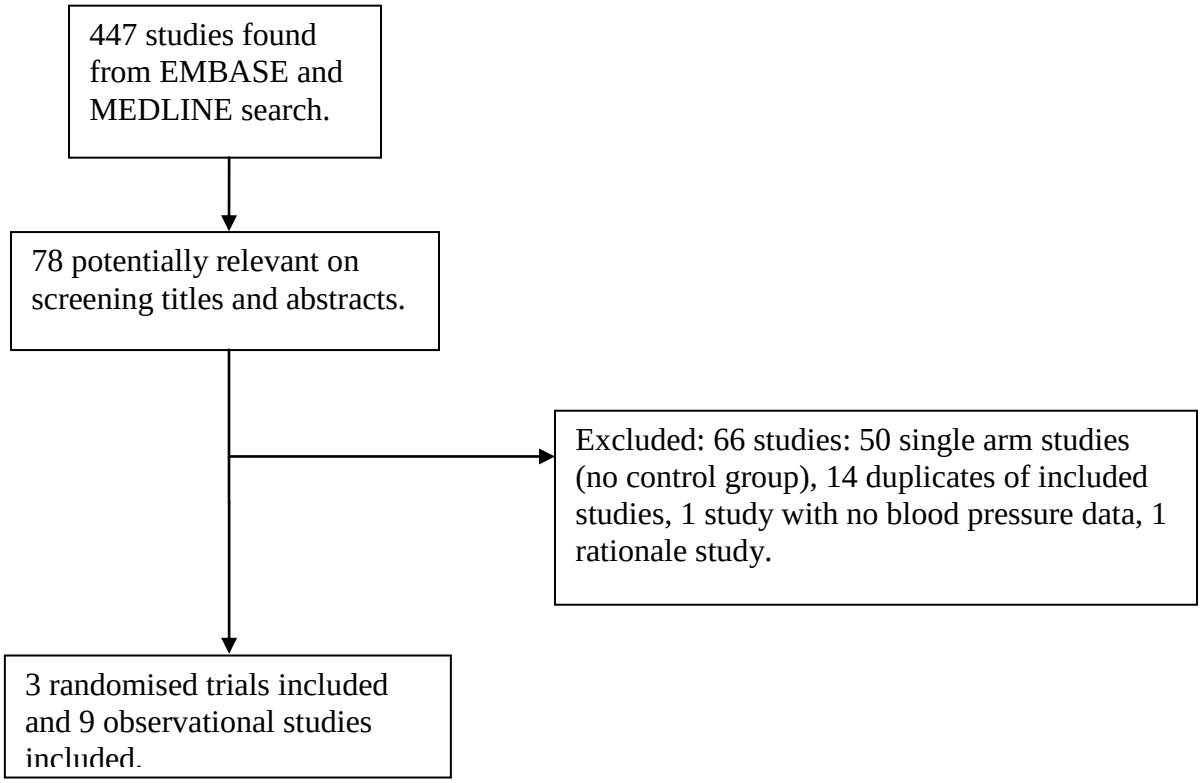
EMBASE, MEDLINE

renal denervation.mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, kf, ps, rs, an, uk] AND. hypertension.mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, kf, ps, rs, an, uk]

AND

1. exp research design/
2. exp clinical trial/
3. comparative study/ or placebos/
4. multicenter study.pt.
5. clinical trial$1.pt.
6. random$.ti,ab.
7. (double blind$ or triple blind$3).ti,ab.
8. placebo$.ti,ab.
9. (clinicaladj trial$1).ti,ab.
10. exp epidemiologic research design/
11. (controlled clinical trial or randomized controlled trial).pt.
12. practice guideline.pt.
13. feasibility studies/
14. clinical protocols/
15. exp treatment outcome/
16. or/1-15

Appendix 2: Flow diagram of study selection



Appendix 3: Quality assessment of included parallel group studies of renal denervation versus control in resistant hypertension

Clinical trials	Blinding	Outcome ascertainment	Baseline differences	Lost to follow up	Selective reporting	Risk of bias
Pokushalov 2012 [12]	None.	Unclear but done according tothe standard Joint National Committee VII guidelines.	No significant differences.	No loss to follow up.	Yes, this was a secondary outcome and not the main objective of the trial	Moderate-High
SymplicityHTN-2 2010 [7]	None.	Office blood pressure using automatic oscillometric Omron HEM-705 monitor	No significant differences.	6 lost to follow up.	No.	Moderate-High
Symplicity HTN-3 2014 [8-9]	Sham procedure in control arm. Both the patient and the outcome assessor were blinded.	Office BP using automatic oscillometric Omron monitor	No significant differences.	12 lost to follow-up	No	Low.
Observational studies	Blinding	Outcome ascertainment	Baseline differences	Lost to follow up	Selective reporting	Risk of bias
Brandt 2012a [14]	None.	Automated blood pressure.	No significant differences.	No loss to follow up.	No.	Moderate, full paper.
Brandt 2012b [15]	None.	Automated blood pressure.	No significant differences.	No loss to follow up.	No.	Moderate, full paper.
Fatum 2012 [16]	None.	Unclear.	Not reported.	No loss to follow up.	Abstract. Not full reporting.	High, abstract only.
Franzen 2012 [13]	None.	Automated blood pressure.	Not reported.	No loss to follow up.	Abstract. Not full reporting.	High, abstract only.
Lambert 2012 [20]	None.	Automated blood pressure.	Use of matching but unclear if there are baseline differences.	No loss to follow up.	Study of quality of life. Not full reporting.	Moderate, full paper.

Krum 2009 [6]	None.	Automated blood pressure.	Some baseline differences were present.	2 lost to follow up.	No.	Moderate, full paper.
Mahfoud 2011 [17]	None.	Unclear but done according to the standard Joint National Committee VII guidelines.	No significant differences.	No loss to follow up.	No.	Moderate, full paper.
Mahfoud 2012 [18]	None.	Unclear but done according to the standard Joint National Committee VII guidelines.	No significant differences.	No loss to follow up.	No.	Moderate, full paper.
Ukena 2011 [19]	None.	Manual blood pressure.	No significant differences	No loss to follow up.	No.	Moderate, full paper.

Appendix 4: Adverse events associated with renal denervation

Clinical trials	Safety results
Pokushalov 2012 [12]	No procedural-related complications occurred with regard to either pulmonary vein isolation or renal ablation.
SymplicityHTN-2 2010 [7]	There were no serious complications related to the device or procedure. Minor periprocedural events included one femoral artery pseudoaneurysm, one post-procedure hypotension, one urinary tract infection and one case of back pain. Seven patients (13%) had transient intraprocedural bradycardia requiring atropine. Renal function was unchanged at 6 months. There were 5 hypertensives emergencies 3 patients in RD group and 2 in control group. Other events requiring admission included one case of nausea and oedema, one hypertensive crisis, one TIA, one hypotensive episode and one coronary stent for angina.
Symplicity HTN-3 2014 [8-9]	Major adverse events: 5/361 vs 1/171. Composite safety end point at 6 months: 14/354 vs 10/171. Death: 2/352 vs 1/171. Myocardial infarction 6/352 vs 3/171. New-onset end-stage renal disease 0/352 vs 0/171. Increase in serum creatinine of >50% from baseline. Embolic event resulting in end-organ damage: 1/352 vs 0/171. Renal-artery intervention: 0/352 vs 0/171. Vascular complication requiring treatment: 1/352 vs 0/171. Hypertensive crisis or emergency: 9/352 vs 9/171. Stroke: 4.352 vs 2/171. Hospitalization for new-onset heart failure: 9/352 vs 3/171. Hospitalization for atrial fibrillation: 5/352 vs 1/171. New renal-artery stenosis of >70% 1/332 vs 0/165.
Observational studies	Safety results
Krum 2009 [6]	Two adverse events out of 45 patients one was renal artery dissection upon placement of catheter before delivery of radiofrequency energy and patients was treated with a stent and the other was a pseudoaneurysm at the femoral access site.
Mahfoud 2011 [17]	One patient developed a pseudoaneurysm at femoral access site that was treated without further sequelae.
Mahfoud 2012 [18]	Two patient developed pseudoaneurysm at the femoral access site which was treated with compression. One patient had contrast medium allergic reaction.