

Gestione dell'ipertensione non controllata: il ruolo della RDN nella strategia terapeutica

Esperienze cliniche

Petrolini Alessandro





ESH Guidelines

Use of renal denervation

Recommendations and statements	CoR	LoE
RDN can be considered as a treatment option in patients with an eGFR >40 ml/min/1.73m ² who have uncontrolled BP despite the use of antihypertensive drug combination therapy, or if drug treatment elicits serious side effects and poor quality of life.	II	B
RDN can be considered as an additional treatment option in patients with true resistant hypertension if eGFR is >40 ml/min/1.73m ² .	II	B
Selection of patients to whom RDN is offered should be done in a shared decision-making process after objective and complete patient's information.	I	C
RDN should only be performed in experienced specialized centers to guarantee appropriate selection of eligible patients and completeness of the denervation procedure.	I	C

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1. Mancia G. et al. Journal of Hypertension 2023, 41(12):1874-2071 DOI:10.1097/HJH.0000000000003480
2. McEvoy et al. European Heart Journal ehaf178. <https://doi.org/10.1093/eurheartj/ehaf178>



European Heart Journal (2024) 00, 1–107
European Society of Cardiology <https://doi.org/10.1093/eurheartj/ehaf178>

ESC GUIDELINES

To reduce BP, and if performed at a medium-to-high volume centre, catheter-based renal denervation may be considered for resistant hypertension patients who have BP that is uncontrolled despite a three BP-lowering drug combination (including a thiazide or thiazide-like diuretic), and who express a preference to undergo renal denervation after a shared risk-benefit discussion and multidisciplinary assessment.

IIb

B

To reduce BP, and if performed at a medium-to-high volume centre, catheter-based renal denervation may be considered for patients with both increased CVD risk and uncontrolled hypertension on fewer than three drugs, if they express a preference to undergo renal denervation after a shared risk-benefit discussion and multidisciplinary assessment.

IIb

A



Multiple European Society guidelines recommend RDN as a safe and effective treatment

2024 ESC Guidelines for the management of elevated blood pressure and hypertension
(European Heart Journal; 2024 – doi: 10.1093/eurheartj/ehae178)



2024 ESC Guidelines for the management of elevated blood pressure and hypertension

Recommendations and statements	Class of recommendation
Due to a lack of adequately powered outcomes trials demonstrating its safety and CVD benefits, renal denervation is not recommended as a first-line BP-lowering intervention for hypertension.	III
Renal denervation is not recommended for treating hypertension in patients with moderate-to-severely <u>impaired renal function</u> ($\text{eGFR} < 40 \text{ mL/min/1.73 m}^2$) or <u>secondary causes of hypertension</u>, until further evidence becomes available.	



RDN ed insufficienza renale

Recommendations and statements	Class of recommendation
- RDN can be considered as a treatment option in patients with an eGFR >40 ml/min/1.73m² who have uncontrolled BP despite the use of antihypertensive drug combination therapy, or if drug treatment elicits serious side effects and poor quality of life. - RDN can be considered as an additional treatment option in patients with resistant hypertension if eGFR is >40 ml/min/1.73m²	II

1

I principali studi randomizzati ad oggi pubblicati in ambito denervazione renale hanno escluso i pazienti con eGFR < 45 ml/min. E' del tutto normale che le nuove linee guida siano state formulate sulla base di questo cut off;

2

I pazienti nefropatici fanno parte, ormai da tempo, della normale pratica clinica. Nel registro GSR il 25% dei pazienti ha eGFR < 60 ml/min

3

Sono ormai diversi gli studi indipendenti, condotti a livello internazionale, che dimostrano efficacia e sicurezza della denervazione renale nei pazienti nefropatici anche agli stadi più gravi.



Insights on safety and efficacy of renal artery denervation for uncontrolled-resistant hypertension in a high risk population with chronic kidney disease: first Italian real-world experience

Federico Marin¹ · Simone Fezzi¹ · Alessia Gambaro¹ · Francesco Ederle¹ · Gianluca Castaldi¹ · Maddalena Widmann¹ · Concetta Gangemi² · Valeria Ferrero¹ · Gabriele Pesarini¹ · Michele Pighi¹ · Flavio L. Ribichini¹

Graphic abstract

Safety and the efficacy of renal sympathetic denervation (RSD) in a daily practice population of patients with uncontrolled resistant hypertension on top of medical therapy.

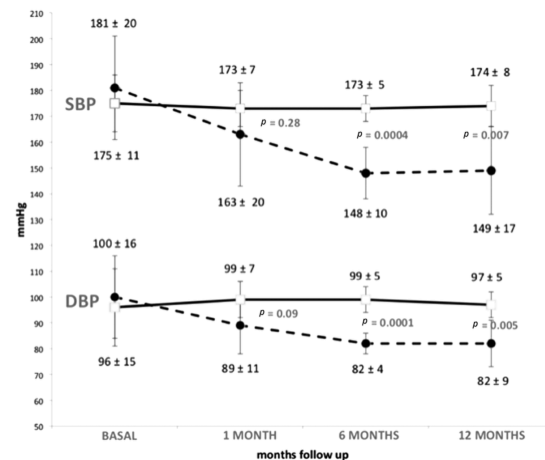
Cohort	Intervention
- Real world, single centre study - Uncontrolled resistant hypertension N=40 - Office BP: 159.0/84.9 mmHg - 24-h ABPM: 155.2/86.5 mmHg - Antihypertensive drugs: N= 5.3 - eGFR < 45 ml/min: N= 21 (52.5%)	Catheter-based radiofrequency renal artery denervation 
Multidisciplinary team (Nephrologist, Cardiologist, Hypertension Specialist)	Efficacy endpoint at 12-month follow-up • Responders to RSD: 74.4% • Δ Systolic Office BP: -19.7 mmHg ± 27.1 • Δ Systolic 24-h ABPM: -13.9 mmHg ± 23.6 • BP reduction was not significantly different in patients with eGFR < 45 ml/min
	Safety endpoint at 12-month follow-up • No major complications • Renal function was stable, even in patients with reduced eGFR
Conclusion: RSD is safe and feasible in patients with resistant hypertension on top of medical therapy, even in a high-risk CKD population with multiple comorbidities. In our experience, RSD determines a significant reduction of systolic BP up to 12 months after the procedure and a trend of reduction of the diastolic BP.	

Marin F, Fezzi S et al. Insights on safety and efficacy of renal artery denervation for uncontrolled-resistant hypertension in a high-risk population with chronic kidney disease: first Italian real-world experience. *Journal of Nephrology*.

Original Article

Renal denervation in patients with end-stage renal disease and resistant hypertension on long-term haemodialysis

Filippo Scalise^{a,d}, Andrea Sole^a, Gurbhej Singh^a, Antonio Sorropago^a, Giovanni Sorropago^a, Cinzia Ballabeni^b, Massimo Maccario^b, Simone Vettoretti^c, Guido Grassi^a, and Giuseppe Mancía^{d,e}



Conclusion: In ESRD patients under long-term haemodialysis in whom BP was markedly elevated despite administration of many antihypertensive drugs, renal denervation lowered both ambulatory and office BP. The reduction persisted over a 1-year follow-up.



Long-terms effects of RDN on Hypertensive patients with mild to moderate CKD



Original Paper | [Free Access](#)

Long-Term Effects of Renal Sympathetic Denervation on Hypertensive Patients With Mild to Moderate Chronic Kidney Disease

Márcio Galindo Kiuchi MD, MSc, PhD, Miguel Luis Graciano MD, PhD

Maria Angela Magalhães de Queiroz Carreira MD, PhD, Tetsuaki Kiuchi MD, Shaojie Chen MD, PhD

Jocemir Ronaldo Lugon MD, PhD [See fewer authors](#) ^

First published: 31 December 2015 | <https://doi.org/10.1111/jch.12724> | [VIEW METRICS](#)

- Prospective, single-arm, single-centre study
- 24-month follow-up
- Included 30 adults with SBP ≥ 160 mmHg (or ≥ 150 mmHg if diabetic) despite treatment with three drugs including a diuretic;
- GFR between 15 and 60 with or without UACR; GFR between 60 and 90 with albuminuria

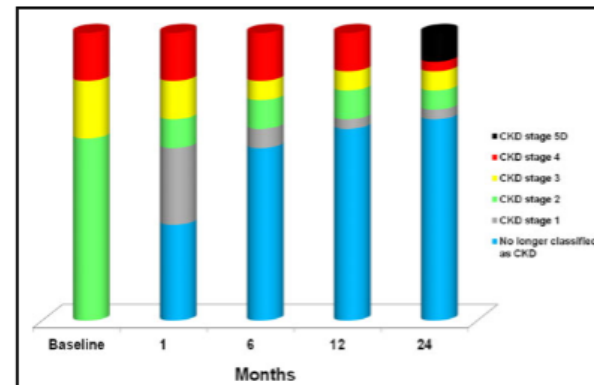
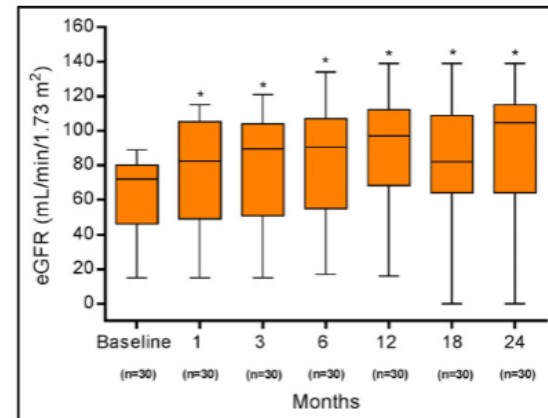


TABLE III. ACR and Plasma Creatinine Level at Baseline and Throughout the Follow-Up

	Baseline (n=30)	First Month (n=30)	Third Month (n=30)	Sixth Month (n=30)	12th Month (n=30)	18th Month (n=27)	24th Month (n=27)
ACR, mg/g	99.8 (38.0–192.1)	46.9 (19.0–182.3)	23.9 ^a (10.9–159.8)	24.4 ^b (10.7–96.3)	17.9 ^c (10.0–100.6)	15.2 ^c (8.4–86.1)	11.0 ^d (4.1–28.1)
Creatinine, mg/dL	1.46 $\pm$ 0.95	1.25 $\pm$ 0.93 ^c	1.25 $\pm$ 0.95 ^c	1.21 $\pm$ 0.89 ^d	1.12 $\pm$ 0.95 ^d	0.93 $\pm$ 0.58 ^d	0.81 $\pm$ 0.57 ^d

Abbreviation: ACR, albumin:creatinine ratio. Values are expressed as median (interquartile range) or mean $\pm$ standard deviation. ^a $P < .05$. ^b $P < .01$. ^c $P < .001$. ^d $P < .0001$ (all vs corresponding baseline values).

La denervazione renale è una procedura **sicura ed efficace** per il trattamento dell'ipertensione incontrollata o resistente. Può essere eseguita in:

Journal of Nephrology
<https://doi.org/10.1007/s40620-025-02406-2>

POSITION PAPERS AND GUIDELINES



The role of renal denervation for the treatment of hypertension in patients with chronic kidney disease: a position paper of the Italian Society of Nephrology

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Abstract

Hypertension is a clinical condition associated with an increase in cardiovascular morbidity and mortality. In chronic kidney disease (CKD), hypertension is also a driver of faster disease progression. Correct and appropriate treatment with antihypertensive medication reduces the risk of cardiovascular events and slows kidney disease progression. However, not all hypertensive patients achieve the desired blood pressure goals despite multiple antihypertensive therapies, and these are defined as patients with uncontrolled or resistant hypertension. Renal denervation has been successfully proposed to mitigate the hyperactivity of the sympathetic nervous system in patients with uncontrolled/resistant hypertension. The guidelines of the European Society of Cardiology and the European Society of Hypertension include renal denervation as a therapeutic option for treating hypertension in patients with uncontrolled or resistant hypertension. However, in patients with CKD, diffusion of the procedure has been limited by concerns over possible adverse effects on kidney function. Over the last few years, the improvement of the device-based procedure and the growing experience accumulated in several Nephrology centers



CKD Patients
(eGFR < 40 ml/min)



Patients on dialysis

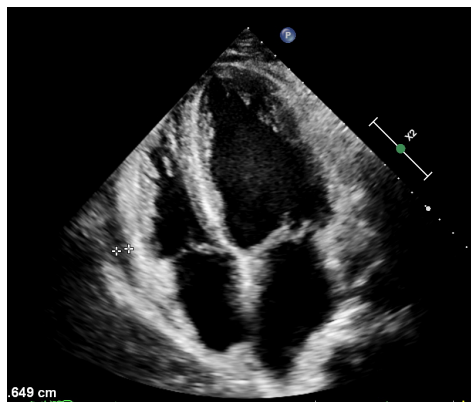


Kidney transplant patients

SIN Position Paper

Ridurre l'attività del sistema nervoso simpatico nei pazienti CKD è un **effort clinico mandatorio**”





A.L. uomo di 51 anni (2022)

Caso clinico 1

- ✓ Ricovero per picco ipertensivo in medicina
- ✓ Screening per Ipertensione secondaria negativo
- ✓ Ottimizzata la terapia farmacologica.
- ✓ Ecocardio: FE 60%, ipertrofia eccentrica.
- ✓ Pregressa nefrite, deterioramento funzione renale → inizia emodialisi.
- ✓ *Terapia* : ASA, Doxazosina 4mg; Furosemide 50mg; Telmisartan 80mg; Amlodipina 10 mg; Atenololo 100mg



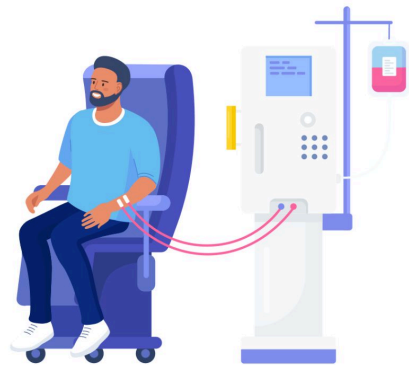
Caso clinico 1

✓ Rivalutazione ambulatoriale:

- valori pressori non controllati
- difficoltà nella gestione della terapia con la dialisi

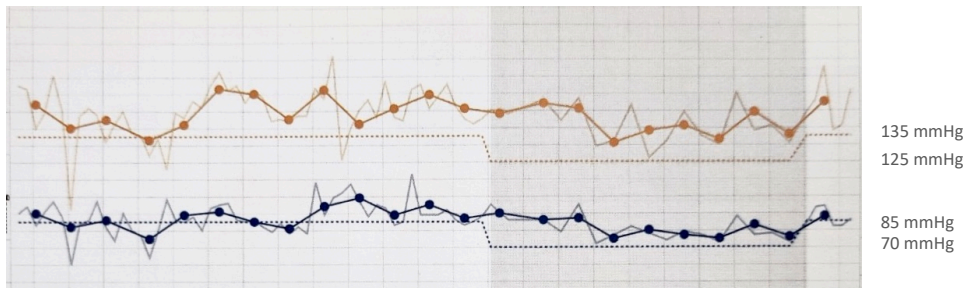
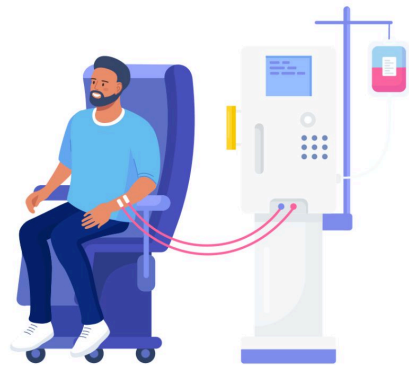
✓ Rivalutazione collegiale per modifica terapeutica/ottimizzazione protocollo dialitico/valutazione aderenza

✓ Ulteriore incremento del dosaggio di Furosemide e Doxazosina



Caso clinico 1

✓ Persiste scarso controllo alla valutazione della PA nelle 24h



✓ Rivalutazione → proposta **RDN** dopo consulto con il nefrologo, accettata dal paziente

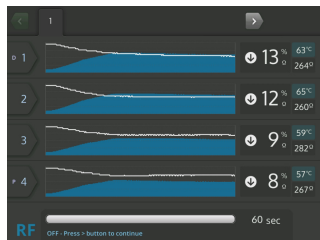
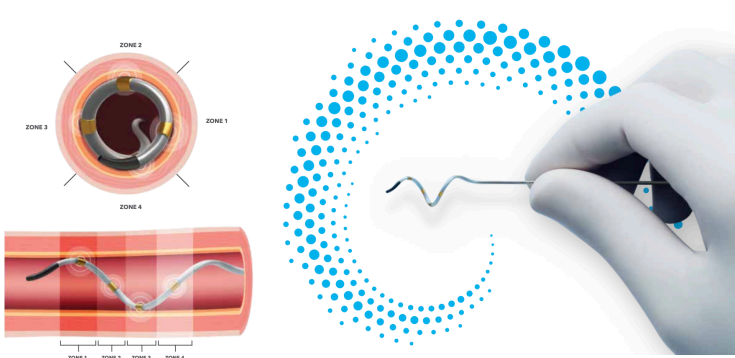


Ricovero in cardiologia per la procedura

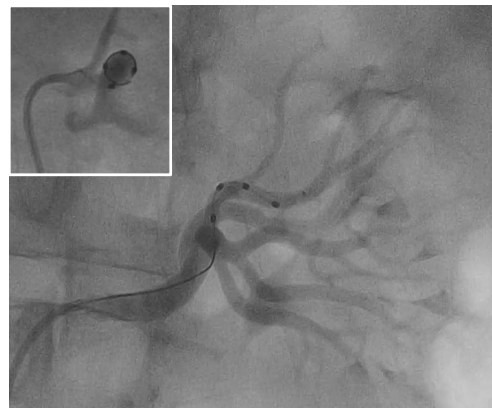


Medtronic

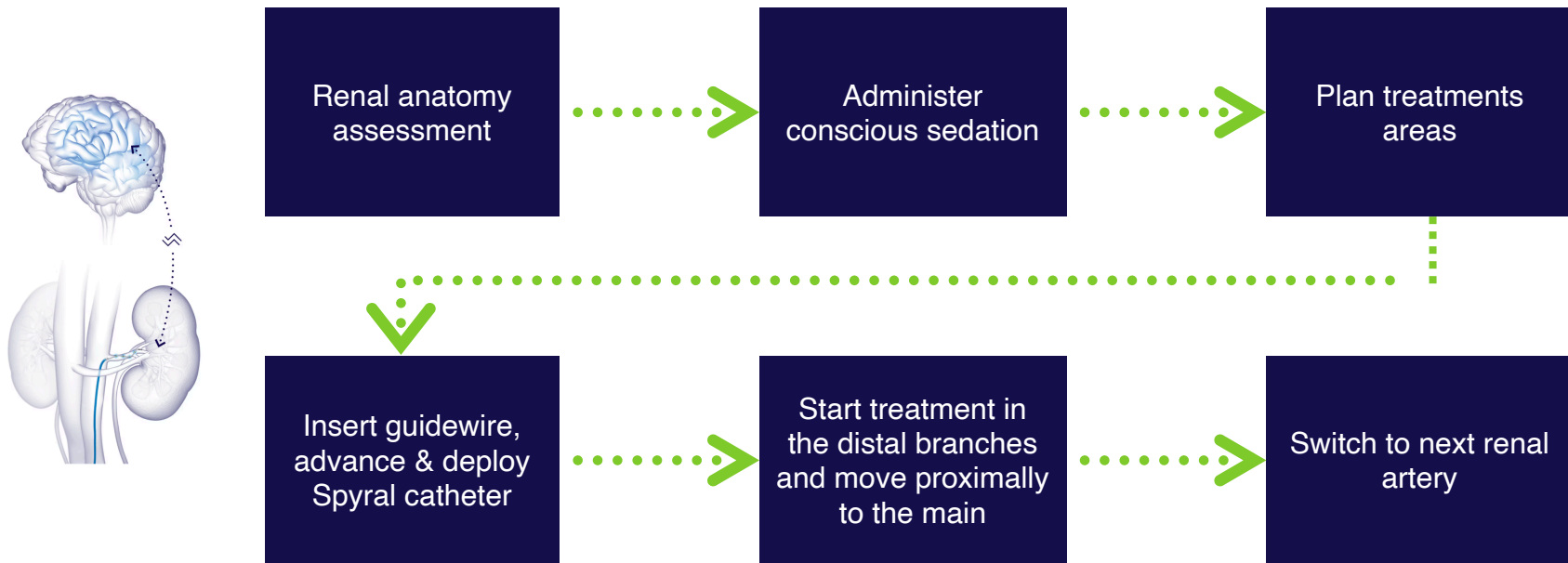
Symlicity Spyral™ multi-electrode RDN catheter



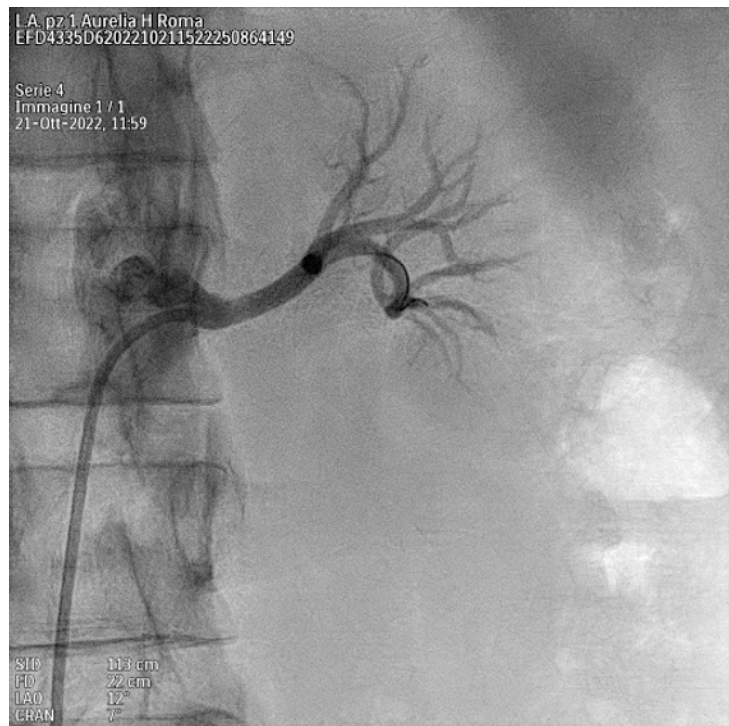
- Multi-electrode catheter with quadrantic vessel contact for simultaneous ablation in up to 4 electrodes
- 60-second simultaneous RF energy delivery
- Vessel diameter range: 3 – 8 mm
- Flexible catheter allows branch treatment
- 6F guiding catheter



Procedure flow



Caso clinico 1



14
ablazioni a
sinistra



I.A. pz 1 Aurelia II Roma
EFD4335D6202210211522250864149

Serie 13
Immagine 1 / 1
21-Ott-2022, 12:29

Pd/Pa = 0.94

SID 105 cm
FD 22 cm
FAO 3°
IT

Caso clinico 1

Valutazione funzionale di una stenosi

- ① Stenosi < 70 % del calibro del vaso
- ② Eseguire valutazione funzionale con guida di pressione senza somministrazione di adenosina.
- ③ Individuare il rapporto **Pd/Pa**:
Pd - pressione rilevata dopo la stenosi;
Pa - pressione rilevata prima della stenosi;
- ④ Se **Pd/Pa >= 0.9**:
La stenosi non è emodinamicamente significativa e quindi **eseguire RDN**
- ⑤ Se **Pd/Pa < 0.9**:
La stenosi è emodinamicamente significativa e quindi **non eseguire RDN**



Caso clinico 1

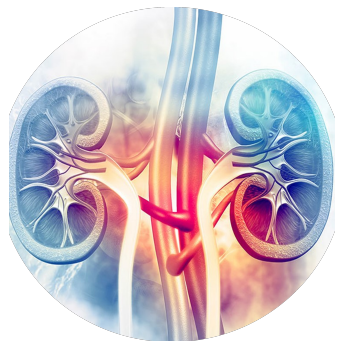


**11 ablazioni
a destra**

Chiusura accesso
femorale con
Femoseal



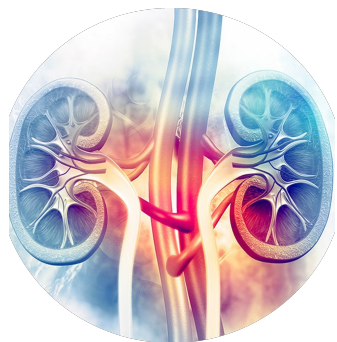
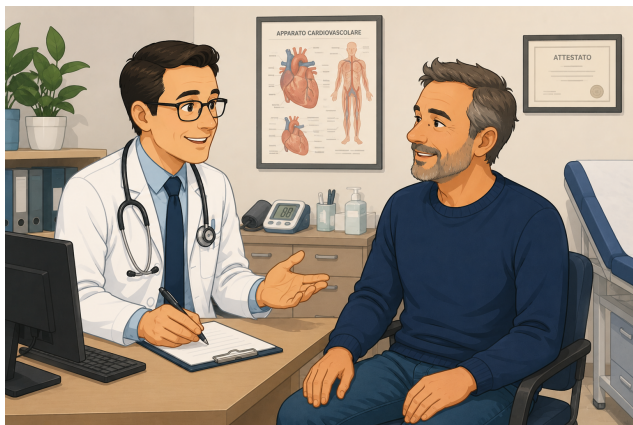
Caso clinico 1



- ✓ Assenza di complicanze
- ✓ Dimissione dopo 48 ore dalla procedura
- ✓ Esami ematici nella norma (tranne creatinina 3.9)
- ✓ *Terapia* : ASA, Doxazosina 8mg; Furosemide 75mg; Telmisartan 80mg; Amlodipina 10 mg; Atenololo 100mg
- ✓ Prosegue programma dialitico ed inserimento in lista trapianto
- ✓ Programma di follow-up (3-6-12-24-36 mesi)



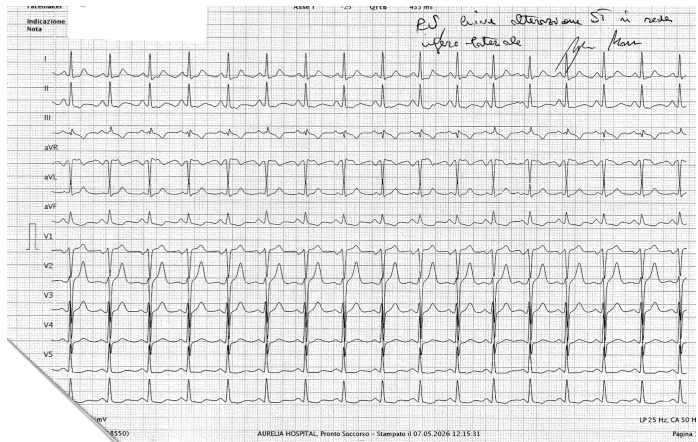
Caso clinico 1



FOLLOW-UP

- ✓ Progressivo miglioramento dei valori pressori dai 3 mesi in avanti. Rivalutazione della terapia.
- ✓ Ultimo controllo nel 2025 (3 anni dalla procedura):
 - ✓ Sospensione di Amlodipina e Cardura
 - ✓ PA media diurna 126/76mmHg, PA media notturna 121/75mmHg.
 - ✓ Ecocardiogramma invariato (lieve miglioramento dei volumi VS)
 - ✓ In attesa di trapianto renale

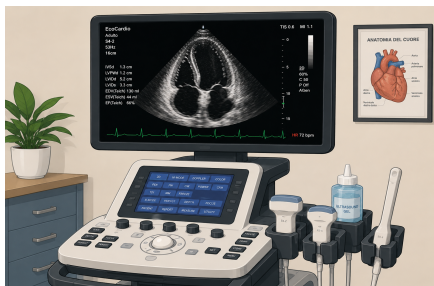




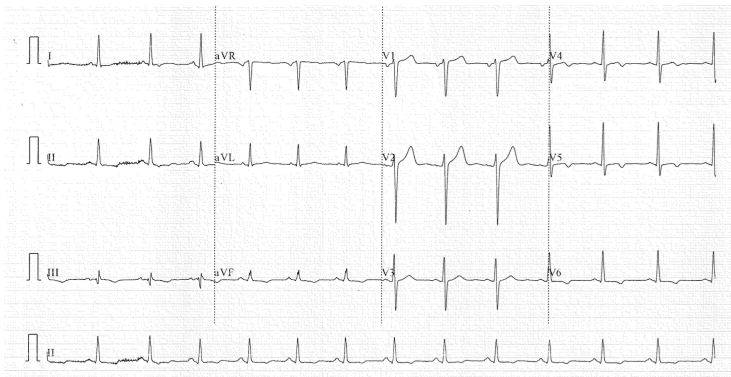
M.F. uomo di 42 anni (2026)

Caso clinico 2

- ✓ Ricovero per *ennesimo* picco ipertensivo associato a parestesie degli arti. PA 245/140 mmHg
- ✓ TC cranio negativa
- ✓ Ecocardio: FE 55%, ipertrofia concentrica.
- ✓ Pregressa tiroidite. Fumatore. Non utilizzo di sostanze di abuso. BMI 30.
- ✓ In passato terapia con perindopril+amlodipina, sospesa 6 anni fa.

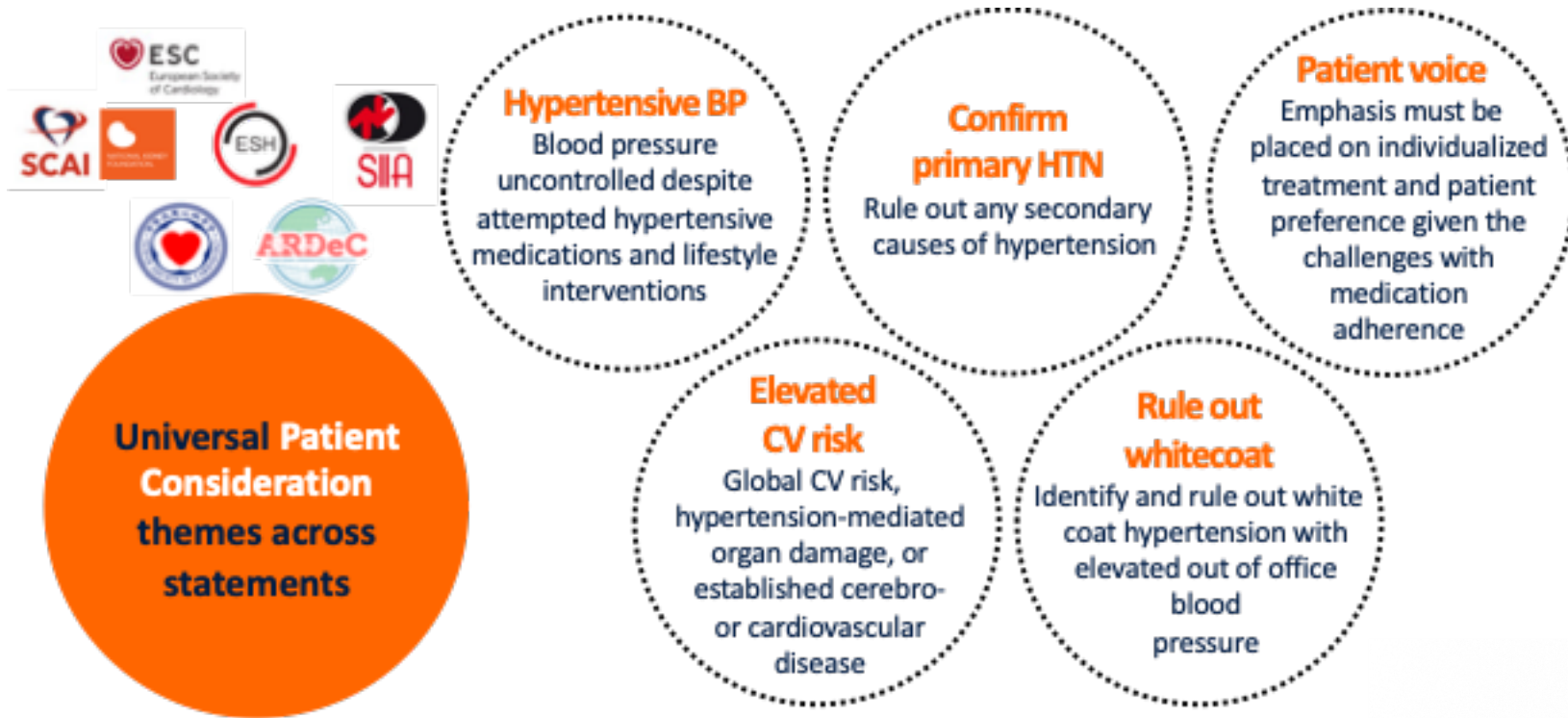


Caso clinico 2



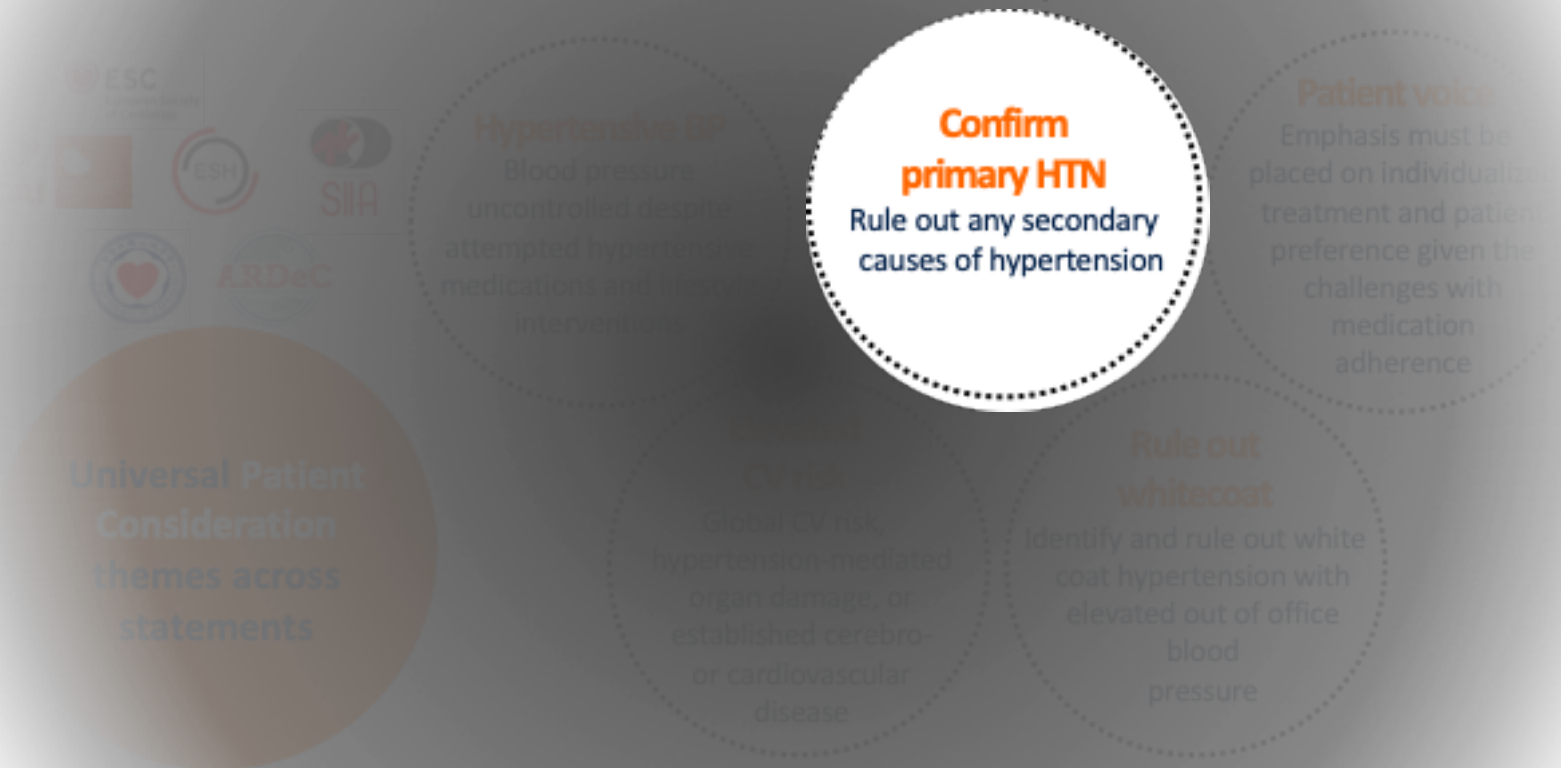
- ✓ In PS somministrati Clonidina e Labetalolo, dopo i prelievi ematici ed esame urine inizia infusione di Urapidil.
- ✓ Progressivo incremento della terapia ipotensiva.
- ✓ Monitoraggio dei valori pressori, non ancora controllati nonostante la terapia in progressivo incremento
- ✓ Lievi alterazioni all'ECG di controllo (TpHS neg)
- ✓ Programmato screening per ipertensione secondaria

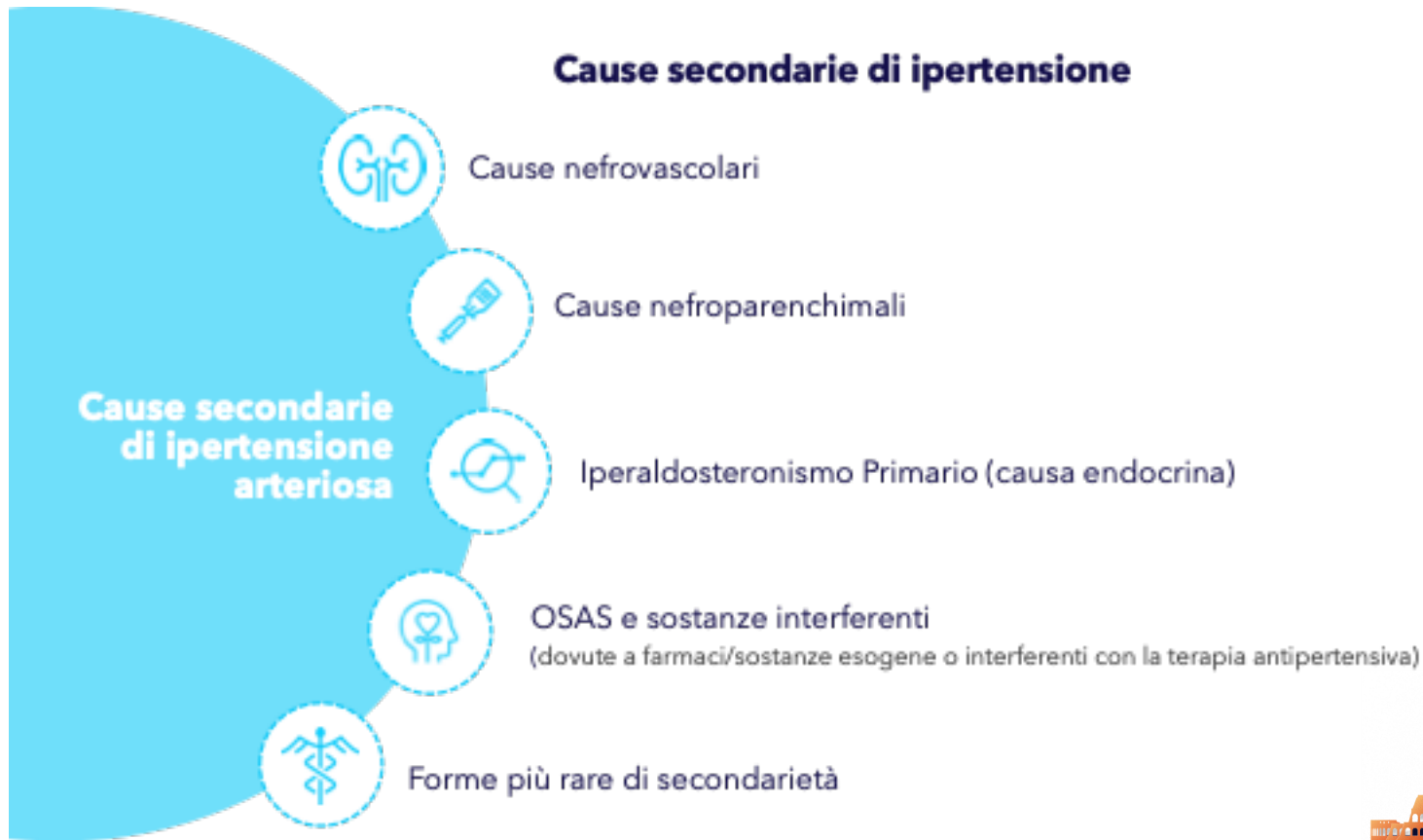






Renal Denervation: in which patient?





Cause secondarie di ipertensione arteriosa



*Ca antagonisti e alfa litici possono essere utilizzati come farmaci sostitutivi nei pazienti ad alto rischio

Cause secondarie di ipertensione

Cause endocrine:

Iperaldosteronismo Primario

Preliminare **wash-out farmacologico** per sospendere farmaci interferenti sul RAS, non sempre eseguibile*

Misurare la **potassiemia** ed eventualmente correggerla poiché bassi livelli di potassio potrebbero inficiare il calcolo di ARR

- Dosaggio di aldosterone plasmatico (**PAC**)
- Renina plasmatica diretta (**DRC**)
- Attività reninica plasmatica (**PRA**) in ortostatismo

Se:

- PAC > 20 ng/dL;
- K < 3.5 mEq;
- DRC < 5 mU/L (o PRA < 0.2 ng/mL/h).

Diagnosi di PA, non necessario test di conferma.

- Calcolo del rapporto **ARR** (**PAC/DRC** o **PAC/PRA**)

Se ARR :

- > 30 (PAC in ng/dl e PRA in ng/ml/h) es. con PRA= 0.2 ng/ml/h
- > 3.7 (PAC ng/dl e DRC in mU/l) es. con DRC= 2 mU/l

Eeguire test di conferma con carico salino / test al captopril.

Test al captopril: somministrazione orale di 50 mg di captopril (un ACE-inibitore) per bloccare il sistema renina-angiotensina e dopo 2 ore viene rimisurata ARR



Cause secondarie di ipertensione: diagnosi iperaldosteronismo

Principali classi di farmaci antipertensivi e il loro effetto su aldosterone, renina e ARR

Farmaco	renina	Aldosterone	ARR	
Diuretici	↑ ↑	↑	↓	Falso negativo
ACE/ARBS	↑ ↑	↓	↓	Falso negativo
Beta Bloccanti	↓ ↓	↓	↑	Falso positivo
Alfa-2agonisti ad azione centrale	↓ ↓	↓	↑	Falso positivo



Caso clinico 2

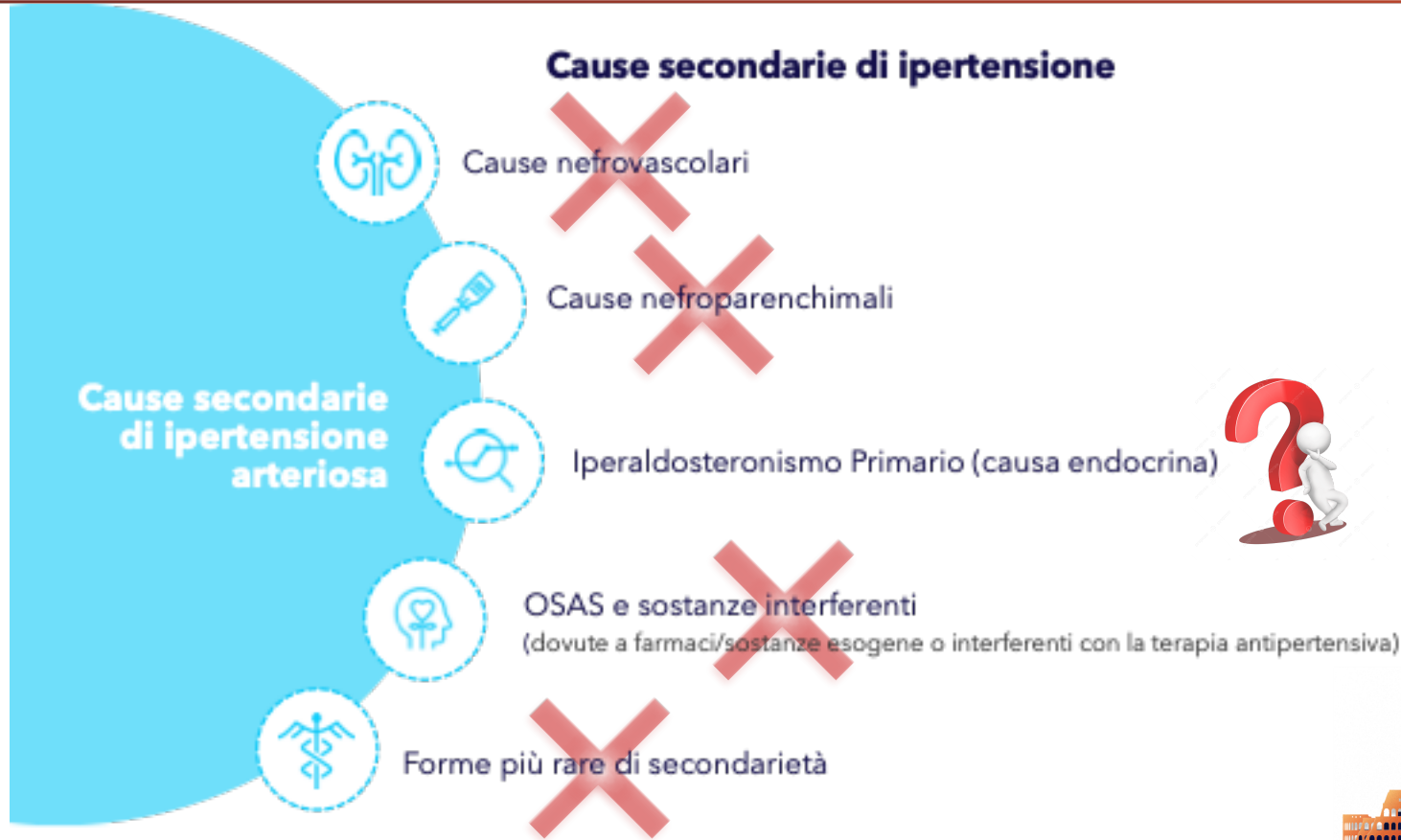


- ✓ Esami ematici: emocromo, elettroliti, funzione renale, TSH, PTH, calciemia, ACTH, cortisolo → nella norma
- ✓ Metanefrine e Normetanefrine plasmatiche/urinarie 24 ore negative
- ✓ Esame urine incluso rapporto rapporto albuminuria/creatininuria nella norma
- ✓ K nella norma, Aldosterone (PAC) 15.1 ng/ml; Renina (DRC) 3.7* $\mu\text{UI/ml}$. **ARR 4.08 (vn < 3.7)**

CALCOLATORE Aldosterone Renin Ratio	
VALORI INSERITI	
PAC 15.10 ng/dL • 418.72 pmol/L • 151.00 pg/mL	
serum K 3.8 mEq/L	
DRC 3.70 mIU/L • 2.22 ng/L • 2.22 pg/mL	
PRA (non specificato)	
RISULTATO	
ARR-D ng/dL/mIU/L	
4.08	(Cut off patologico > 2.06)



Caso clinico 2

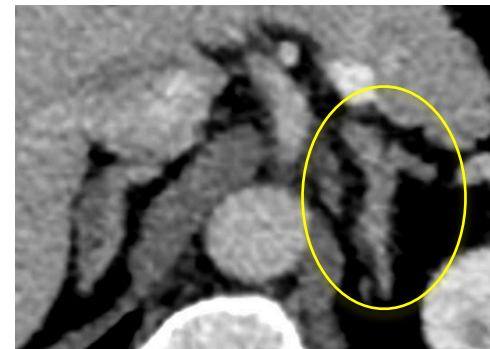


AngioTC addome:

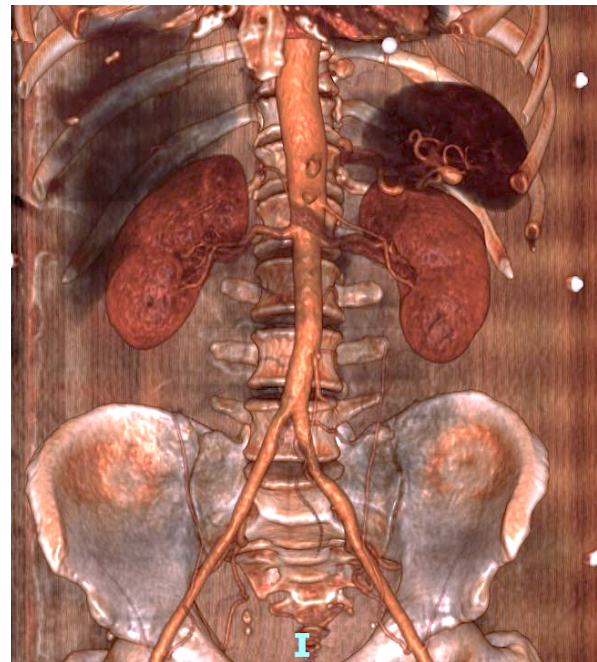
nulla di rilevante,

assenza di adenomi surrenalici

(minima ipertrofia del braccio mediale del surrene sinistro)



AngioTC addome:



Terapia ipotensiva in corso:

Caso clinico 2

1. Candesartan 16 mg
2. Amlodipina 5 mg
3. Furosemide 25 mg
4. Canrenone 50 mg
5. Nebivololo 5 mg
6. Doxazosina 2 mg
7. Clonidina 5 mg TC



Caso clinico 2



Iperaldosteronismo Primario (causa endocrina)



- ✓ ARR suggestivo ma non diagnostico (possibile influenza farmacologica).
- ✓ Attualmente con 7 farmaci ipotensivi (incluso MRA) e valori di PA non ancora ottimali
- ✓ Washout farmacologico (4-6 settimane) per test di conferma (saline infusion o captopril challenge) poco fattibile e sicuro.
- ✓ Sampling venoso surrenalico complesso e non percorribile.
- ✓ Imaging negativo per target chirurgico.



Pur non potendo escludere con assoluta certezza una forma lieve/non lateralizzabile di autonomia aldosteronica, il paziente presenta quadro clinico prevalente di ipertensione arteriosa resistente ad elevato burden farmacologico, in assenza di target correggibile chirurgicamente.

Si ritiene pertanto appropriato:

- prosecuzione di terapia anti-mineralcorticoide (preferibilmente con eplerenone/canrenone secondo tollerabilità e risposta clinica),
- ottimizzazione terapeutica globale,
- associazione di procedura di denervazione renale (RDN), considerata:
 - giovane età del paziente,
 - persistenza di valori pressori elevati nonostante terapia medica massimizzata,
 - verosimile contributo di iperattivazione simpatica,
 - necessità di riduzione del carico farmacologico e del rischio cardiovascolare a lungo termine.

La proposta di denervazione renale appare pertanto clinicamente motivata e coerente con quadro di ipertensione arteriosa resistente refrattaria a terapia medica intensiva dopo ragionevole esclusione delle principali cause secondarie correggibili.

Si discute a lungo con il paziente la possibilità di eseguire tale procedura con i vantaggi ed i limiti del caso clinico, quadro ben compreso ed accetta la procedura proposta.

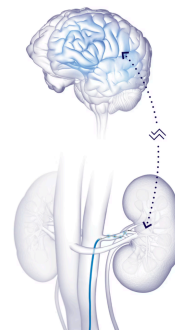
Dott. Alessandro Petrolini



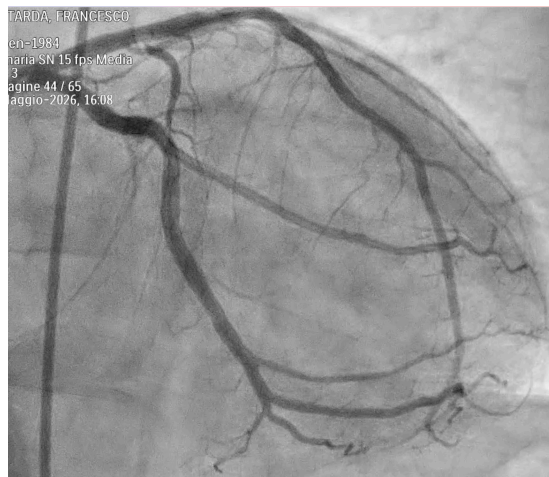
Aurelia Hospital S.r.l

Via Aurelia 860 – 00165 Roma Tel. 06 664921

Utilizzare la RDN non come «ultima spiaggia» ma come strumento per rendere gestibile il fenotipo ipertensivo e permettere una caratterizzazione successiva più pulita



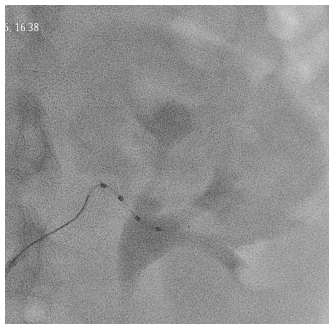
Coronarografia e studio microcircolo coronarico



Assenza di stenosi né alterazioni del microcircolo (CFR 2.1, IMR 11; FFR 0.94)



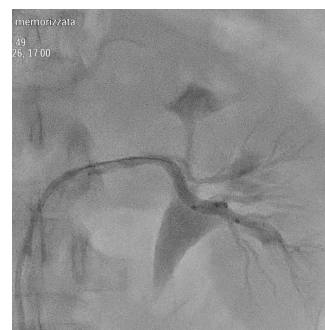
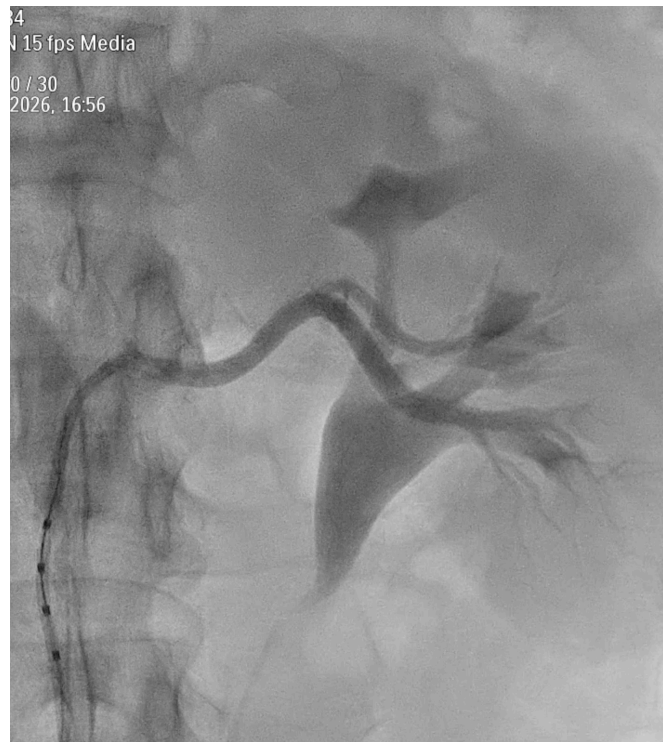
Rene sinistro (39 ablazioni)



Rene sinistro (39 ablazioni)



Rene sinistro (arteria accessoria polare, 19 ablazioni)

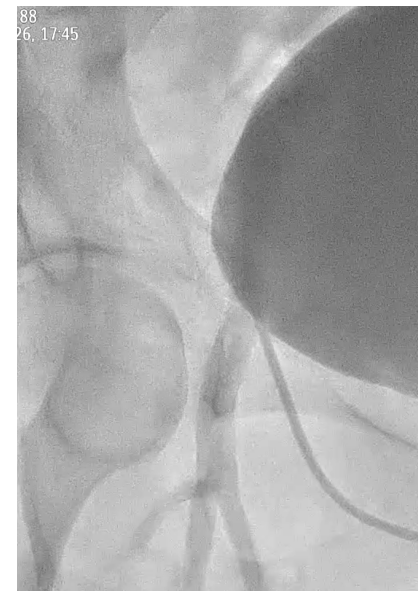


Rene destro (36 ablazioni)



Rene destro (36 ablazioni) - *94 ablazioni complessive* -

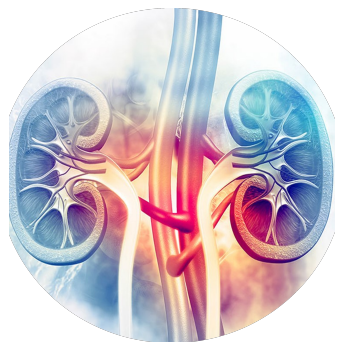
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Maggio-2026, 17:14



Chiusura accesso femorale con Femoseal



Caso clinico 1



- ✓ Assenza di complicanze
 - ✓ Dimissione dopo 48 ore dalla procedura
 - ✓ Esami ematici nella norma (inclusa creatinina 0.89)
 - ✓ *Terapia* : ASA (1 mese), Candesartan 16 mg, Amlodipina 5 mg, Furosemide 25 mg, Canrenone 50 mg, Nebivololo 5 mg, Doxazosina 2 mg, Clonidina 5 mg TC
 - ✓ Rivalutazione endocrinologica a distanza.
 - ✓ Programma di follow-up (3-6-12-24-36 mesi)
- (ad un mese sospesa Clonidina, Holter PA nella norma)



Oltre ai profili di trattamento «standard» la procedura di RDN va considerata **alleato cruciale** anche nei pazienti affetti da ipertensione di difficile trattamento con insufficienza renale cronica (incluso il trattamento di emodialisi) e nei pazienti nei quali seppur con sospetta ipertensione secondaria il trattamento farmacologico (o chirurgico) non è ulteriormente percorribile.





DIVERSI PROFESSIONISTI
POSSONO E DEVONO
ANDARE D'ACCORDO
QUANDO IL FINE È COMUNE:

**PREVENIRE EVENTI
AVVERSI AL
NOSTRO PAZIENTE**

GRAZIE



COMMENTO

Il monitoraggio pressorio dal 25/06/2026 al 26/06/2026 evidenzia:

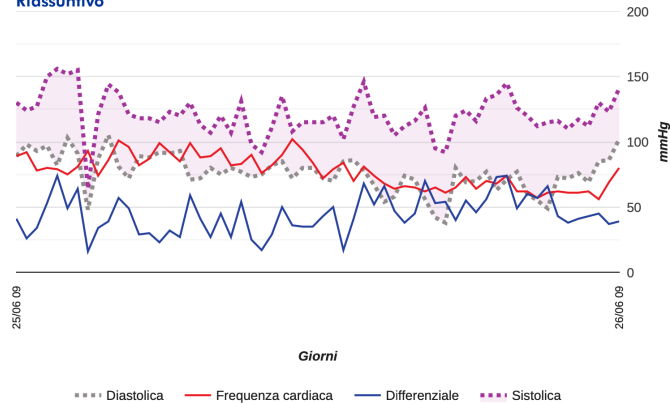
- 60 rilevazioni valide nel periodo selezionato
- nessuna rilevazione sistolica ha superato il valore di 180 mmHg
- nessuna rilevazione diastolica ha superato il valore di 120 mmHg
- pressione sistolo-diastolica media: 120/76mmHg
- pressione sistolo-diastolica media diurna: 121/80mmHg
- pressione sistolo-diastolica media notturna: 119/64mmHg
- carico pressorio (rilevazioni che hanno superato le soglie impostate): 21% per le misurazioni sistoliche e 36% per quelle diastoliche
- carico pressorio diurno: 18% per le misurazioni sistoliche e 36% per le misurazioni diastoliche
- carico pressorio notturno: 37% per le misurazioni sistoliche e 37% per le misurazioni diastoliche
- variabilità pressoria (deviazione standard): 16mmHg per le misurazioni sistoliche e 14mmHg per le misurazioni diastoliche
- variabilità pressoria diurna: 17mmHg per le misurazioni sistoliche e 12mmHg per le misurazioni diastoliche
- variabilità pressoria notturna: 13mmHg per le misurazioni sistoliche e 12mmHg per le misurazioni diastoliche
- pressione differenziale media: 44mmHg
- frequenza cardiaca media: 77b/m.

CONCLUSIONI

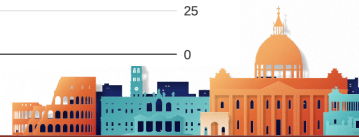
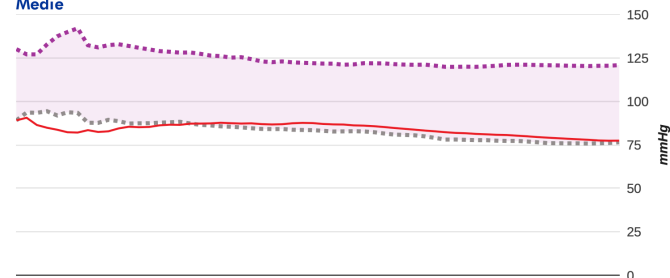
(rapportate ai valori soglia impostati):

- normali valori di pressione sistolo-diastolica media
- calo pressorio notturno sistolico di tipo non dipper
- calo pressorio notturno diastolico di tipo dipper
- normale carico pressorio sistolo-diastolico
- elevata variabilità diastolica
- normali valori di pressione differenziale media
- normali valori di frequenza cardiaca media.

Riassuntivo



Medie



RDN in Aurelia Hospital, Rome

Recruitment started
in March 2022

CHARACTERISTICS	N (%) or mean (IQR)
Number	30*
Male	18 (62%)
Age, yrs	63 (25-80)
DM II	6 (21%)
Smoking Habit	13 (45%)
Previous Revascularization	6 (20%)
FE<50%	1 (3%)
Stroke/TIA	4 (12%)
Peripheral artery disease	0
CKD (stage III or more)	5 (16%)

* 22 pts
uncontrolled
hypertension (≥ 3
medications) and
8 resistant patients
(taking all available
and tolerated
medications)

RDN in Aurelia Hospital, Rome

Number of ablation	Mean (IQR)
Right Renal Artery	30 (16-59)
Left Renal Artery	29 (11-59)
Total ablations sites (mean N° ablations/pt) *	59 (26-106)
In-hospital complications	1**

** femoral artery access hematoma

RDN in Aurelia Hospital, Rome

FINDINGS	Baseline (30 pts)	3-months (29 pts)	6-months (28pts)	12-months (23 pts)	12-mo. change	24-months (14 pts)	12-mo. change
24-H SBP mmHg	155	149	138	130	-16%	128	-17.4%
24-H DBP mmHg	88	82	80	78	-12%	77	-12.5%
Pts taking drugs:							
- ACEi/ARB	100%	100%	100%	100%	-	100%	-
- CCB	81%	77%	73%	71%	-12%	69%	-13%
- Hzt	50%	48%	45%	45%	-10%	45%	-10%
- Loop diuretics	33%	25%	25%	21%	-36%	20%	-35%
- BB	85%	85%	81%	81%	- 4%	81%	- 4%
- Alfa blocker	32%	27%	24%	24%	-25%	23%	-27%
- MRA	58%	57%	57%	57%	- 1%	57%	- 1%

Percorso RDN Ospedale di Verona (gent. conc. Dott. Tavella)

