



**7th Advances
in Heart
Failure 2024**

10 e 11 de Outubro

FACULDADE DE MEDICINA DA UNIVERSIDADE DO PORTO

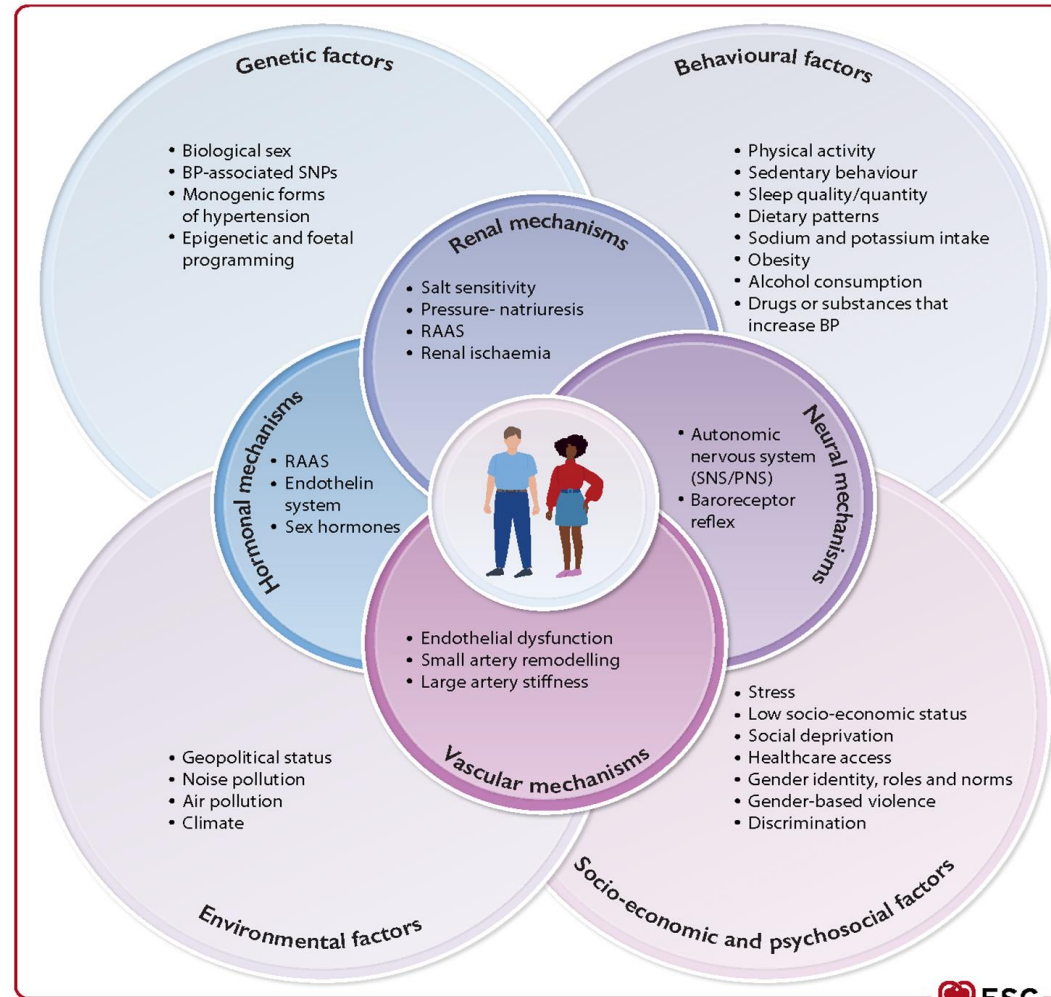
Terapêuticas inovadoras

na HTA

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Patofisiologia da HTA



Terapêutica da HTA

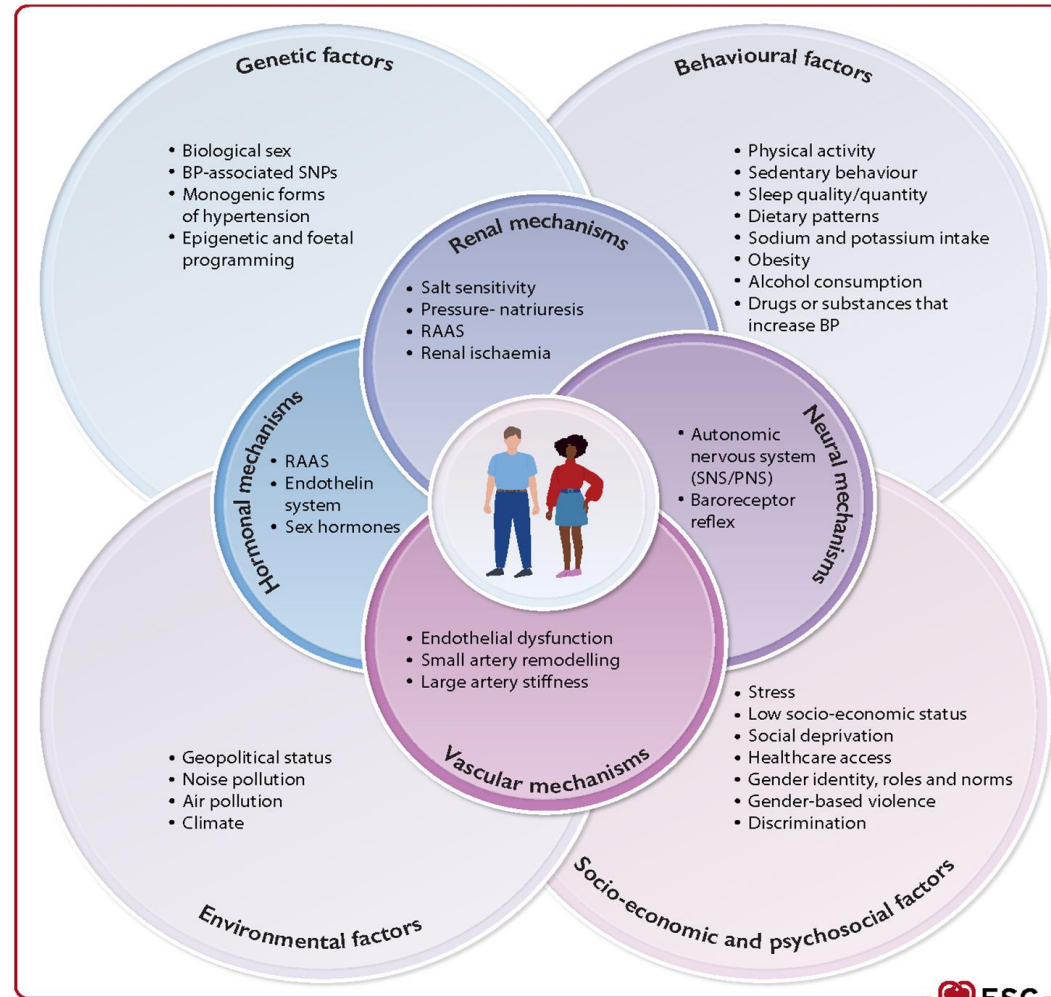
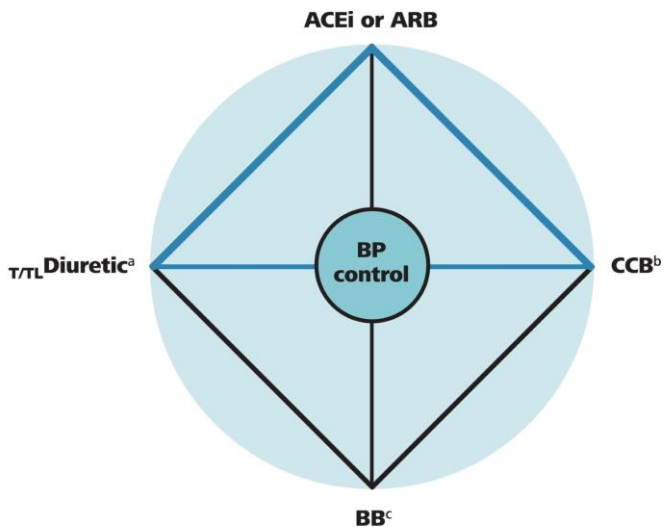
Alteração do estilo de vida

IECA e ARA II

Bloqueadores dos canais de cálcio

Diuréticos (tiazidas e "tiazida-like")

Bloqueadores beta



Terapêutica da HTA

Alteração do estilo de vida

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Bloqueadores dos canais de cálcio

Diuréticos (tiazidas e "tiazida-like")

Bloqueadores beta

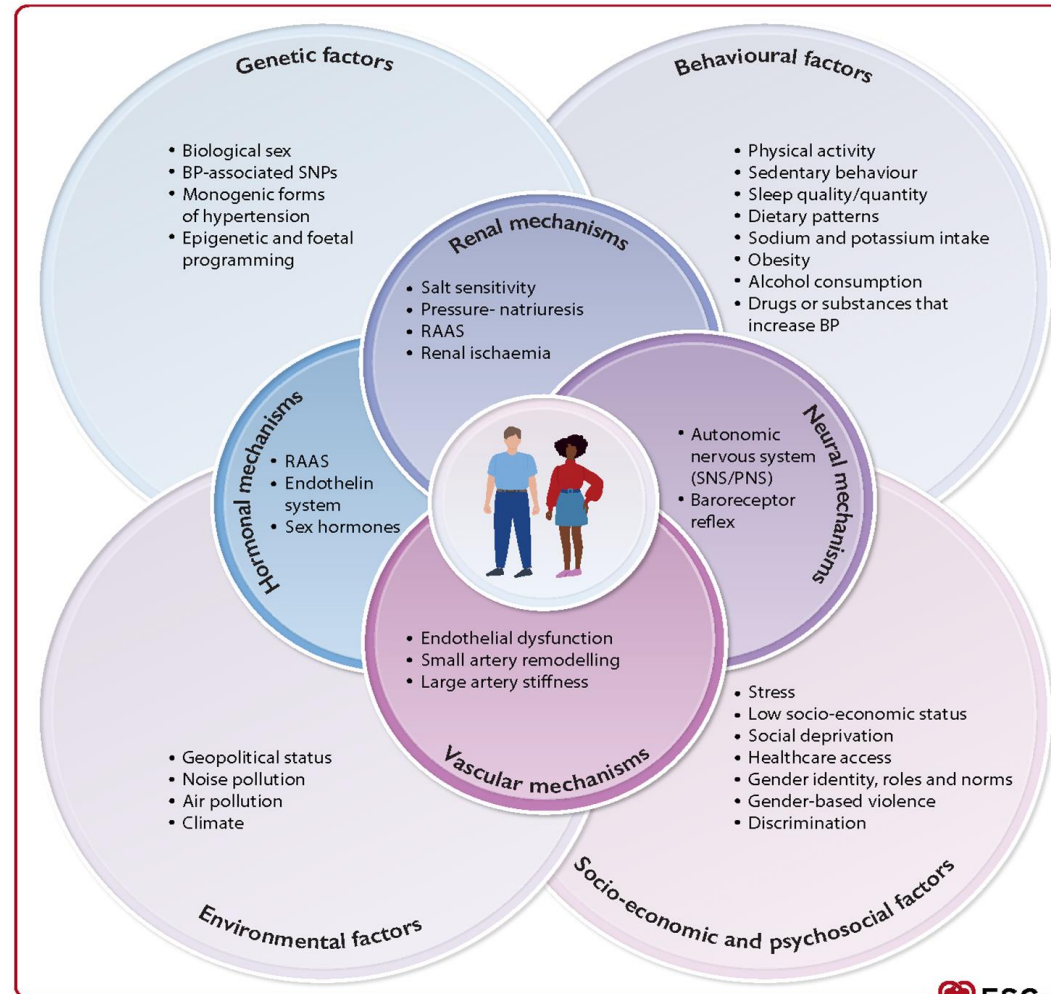
Antagonistas do recetor
mineralocorticoide

Diuréticos de ansa

Bloqueadores alfa

Vasodilatadores

Fármacos de ação central



Terapêuticas inovadoras

ARNi (sacubitril/valsartan)

SGLT2i (cana, dapa, empa,
ertugliflozina)

ARM não esteroide (finerenona)

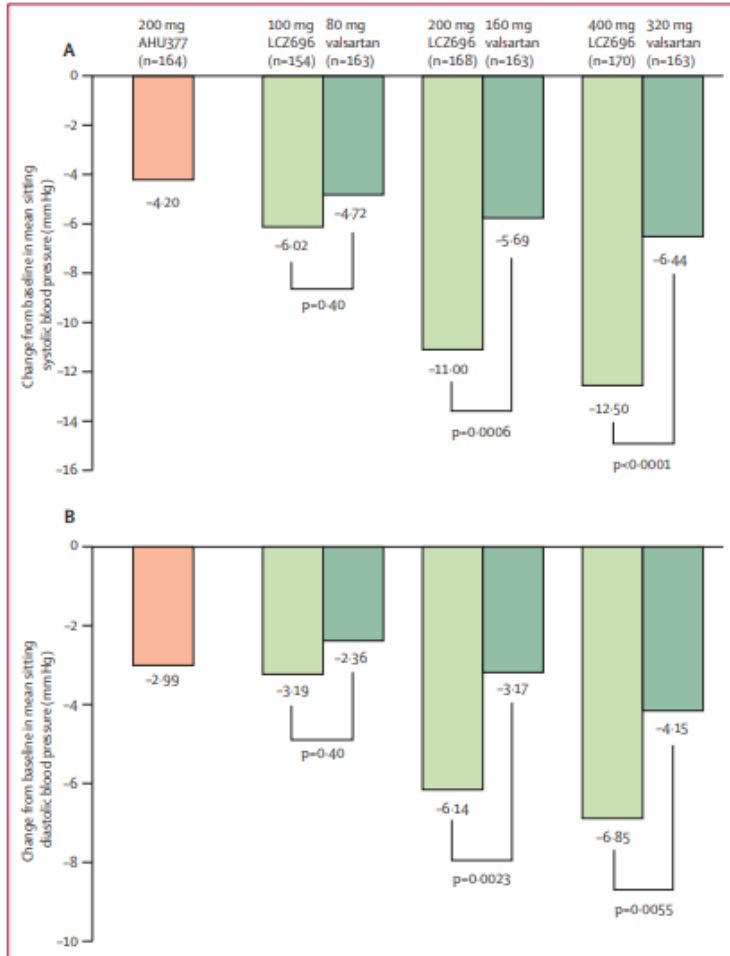
Antagonistas recetores endotelina
(aprocitentan)

Inibidores aldosterona sintetase
(baxdrostato e lorundrostato)

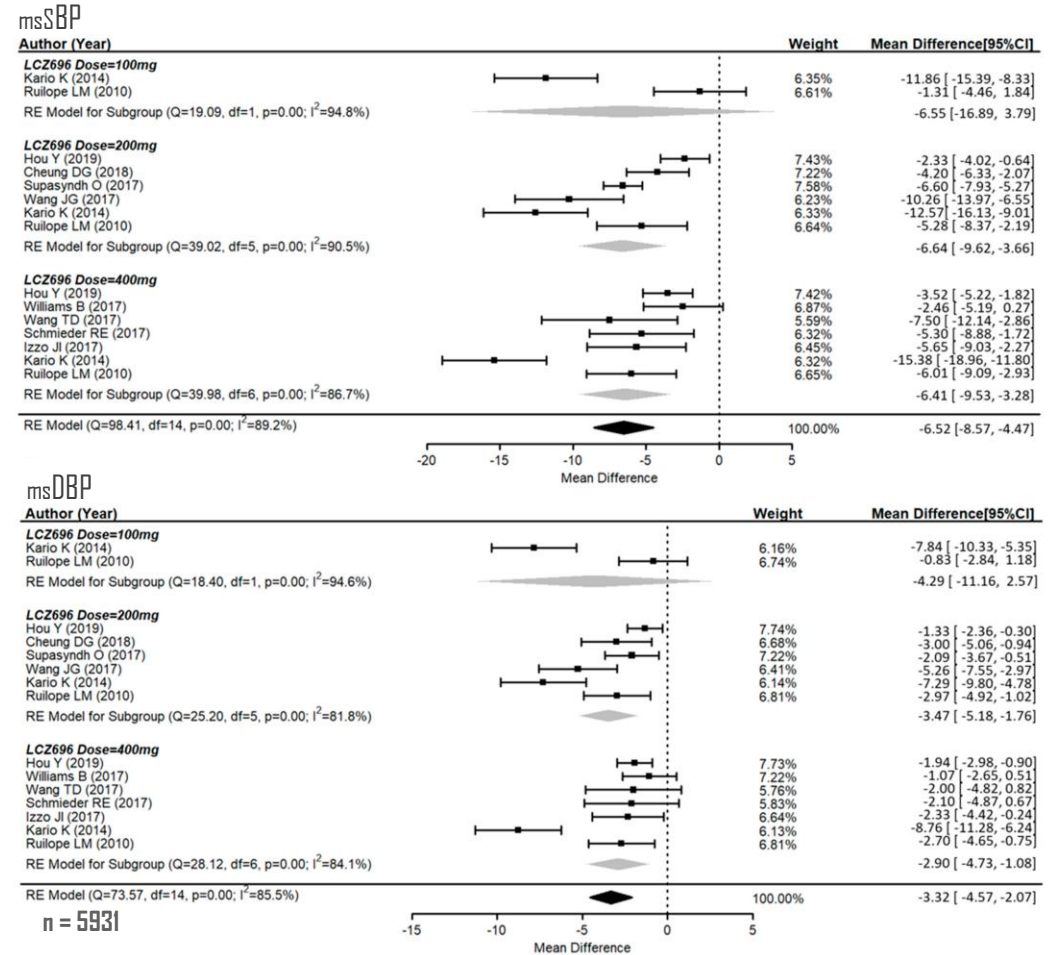
Agente de interferência no RNA
(zilebesiran)

Procedimento invasivo
(desnervação renal)

ARNi – sacubitril/valsartan – efeito na PA

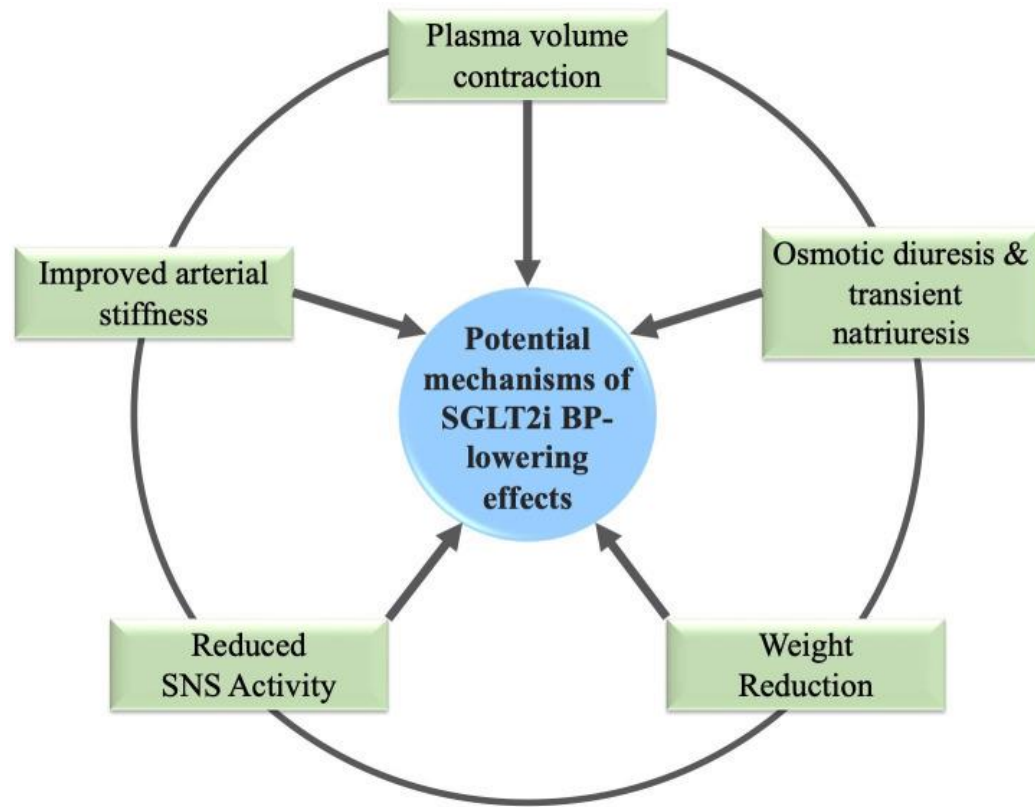


Ruilope LM et al. *Lancet*, 2010; 375: 1255



Chua SK et al. *J Clin Med*, 2021; 10: 2824

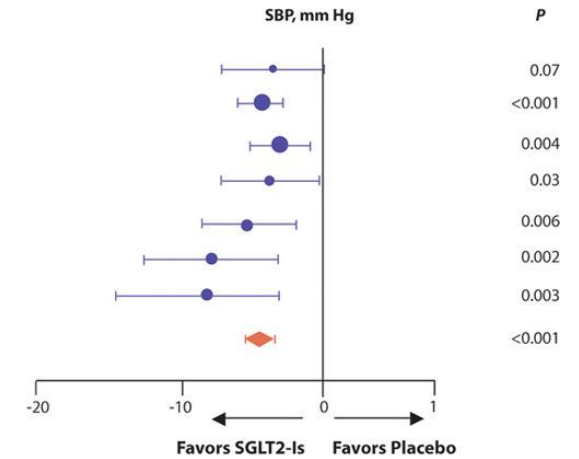
iSGLT2 – efeito na PA



A

Author	SGLT2-Is		Placebo		$\Delta\Delta$ (95% CI)
	No.	Δ (SD)	No.	Δ (SD)	
Lambers Heerspink, 2013	24	-5.6 (11.6)	25	-0.7 (9.2)	-3.3 (-6.8, 0.2)
Tikkanen, 2015	276	-3.7 (8.3)	271	0.5 (8.2)	-4.2 (-5.5, -2.8)
Weber, 2015	267	-9.6 (20.0)	263	-6.7 (20.3)	-2.9 (-4.9, -0.9)
Amin, 2015	36	-3.5 (7.0)	36	0.1 (6.6)	-3.6 (-6.9, -0.3)
Townsend, 2016	56	-6.2 (10.5)	56	-1.2 (10.5)	-4.9 (-8.4, -1.5)
Kario, 2018	68	-10.0 (14.1)	63	-2.4 (14.0)	-7.7 (-12.5, -2.8)
Ferdinand, 2019	78	-10.3 (16.3)	72	-1.9 (16.5)	-8.4 (-13.7, -3.0)
Total	805		786		-4.4 (-5.5, -3.4)

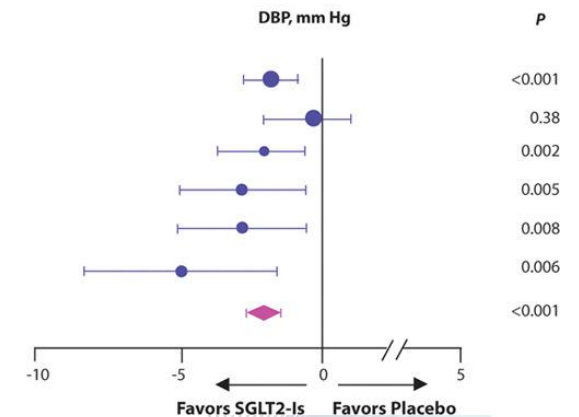
Heterogeneity ($Q=5.10, I^2=0.0\%, P=0.53$)



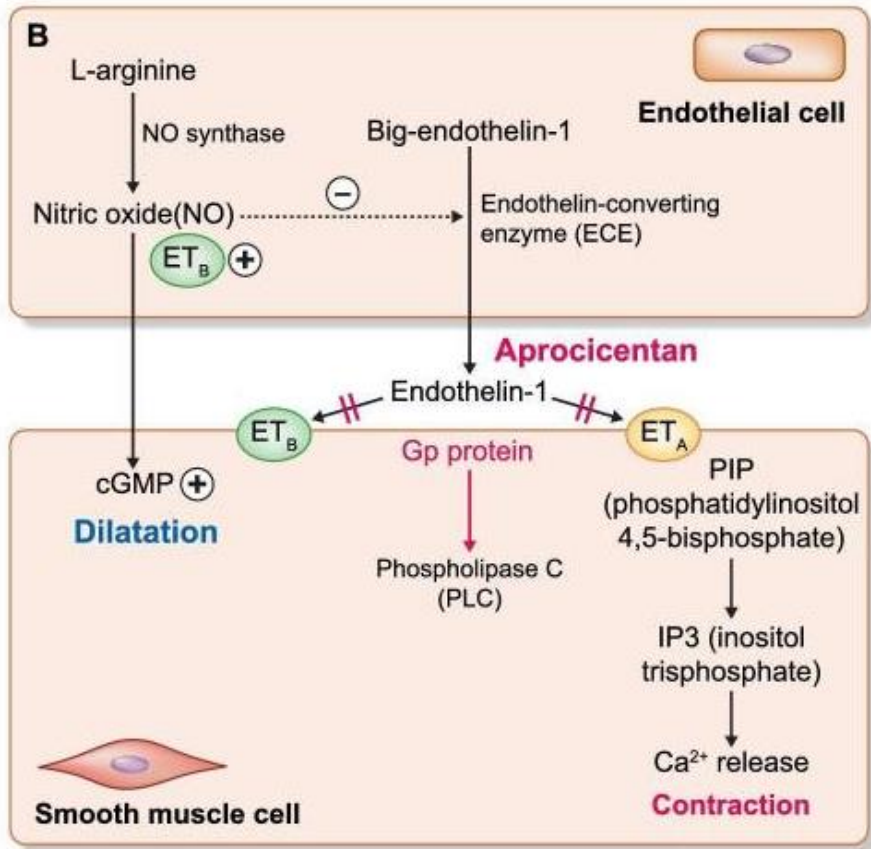
B

Author	SGLT2-Is		Placebo		$\Delta\Delta$ (95% CI)
	N°	Δ (SD)	N°	Δ (SD)	
Tikkanen, 2015	276	-1.4 (5.3)	271	0.3 (5.1)	-1.7 (-2.5, -0.9)
Weber, 2015	267	-6.2 (13.8)	263	-5.5 (13.7)	-0.6 (-2.0, 0.7)
Amin, 2015	36	-1.5 (4.7)	36	0.8 (4.7)	-2.2 (-3.6, -0.8)
Townsend, 2016	56	-3.2 (6.0)	56	-0.3 (6.0)	-2.9 (-5.0, -0.9)
Kario, 2018	68	-3.5 (6.1)	63	-0.7 (6.1)	-2.9 (-5.0, -0.8)
Ferdinand, 2019	78	-5.0 (11.7)	72	-2.6 (11.3)	-4.9 (-8.4, -1.5)
Total	781		761		-1.9 (-2.6, -1.2)

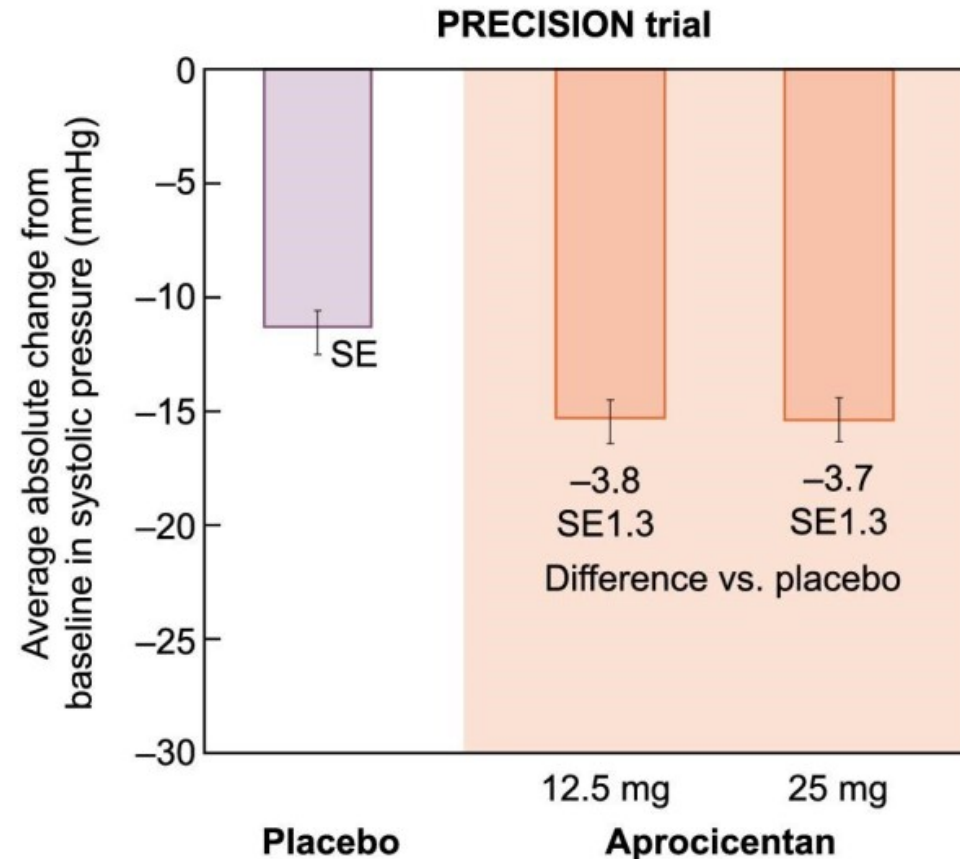
Heterogeneity ($Q=2.90, I^2=0.0\%, P=0.72$)



Antagonista dos receptores A e B da endotelina – aprocicentan – efeito na PA



Zoccali C et al. *Clin Kidney J.* 2024; 17: 1

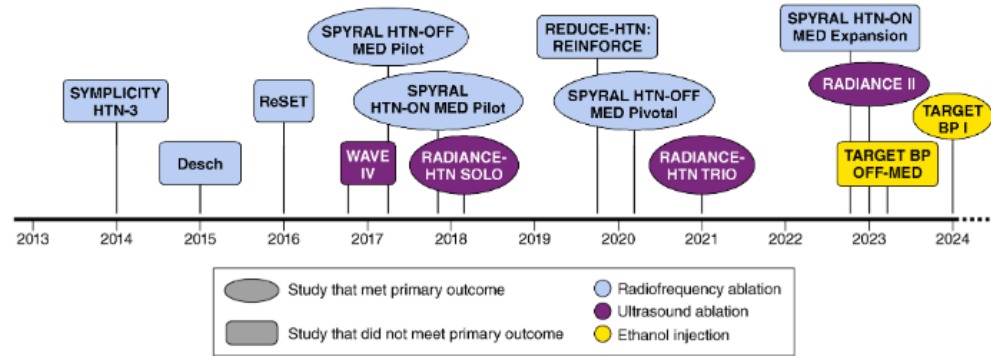


Efeitos adversos

- edema
- flushing
- cefaleia
- anemia
- teratogêneos?

Schlaich MP. *Lancet.* 2022; 400: 1927

Desnervação renal



Cluett JL et al. *Hypertension*, 2024; 81: e135

Study or Subgroup	RDN			Sham			Weight	Mean Difference IV, Random, 95% CI	Mean Difference IV, Random, 95% CI
	Mean	SD	Total	Mean	SD	Total			
Desch 2015	-8.5	11.11	32	-3.7	10.11	35	20.0%	-4.80 [-9.90, 0.30]	
RADIANCE-HTN SOLO	-8.5	9.3	74	-2.2	10	72	53.1%	-6.30 [-9.43, -3.17]	
ReSET	-6.1	18.9	35	-4.3	15.1	33	7.9%	-1.80 [-9.91, 6.31]	
SPYRAL HTN-ON MED	-8.8	11.3	36	-3.2	11.4	36	19.0%	-5.60 [-10.84, -0.36]	
Total (95% CI)			177			176	100.0%	-5.51 [-7.79, -3.23]	

Heterogeneity: Tau² = 0.00; Chi² = 1.12, df = 3 (P = 0.77); I² = 0%
Test for overall effect: Z = 4.73 (P < 0.00001)

Stavropoulos K et al. *J Clin Hypertens*, 2020; 22: 572

High-frequency energy
Ultrasound energy
Arterial hypertension

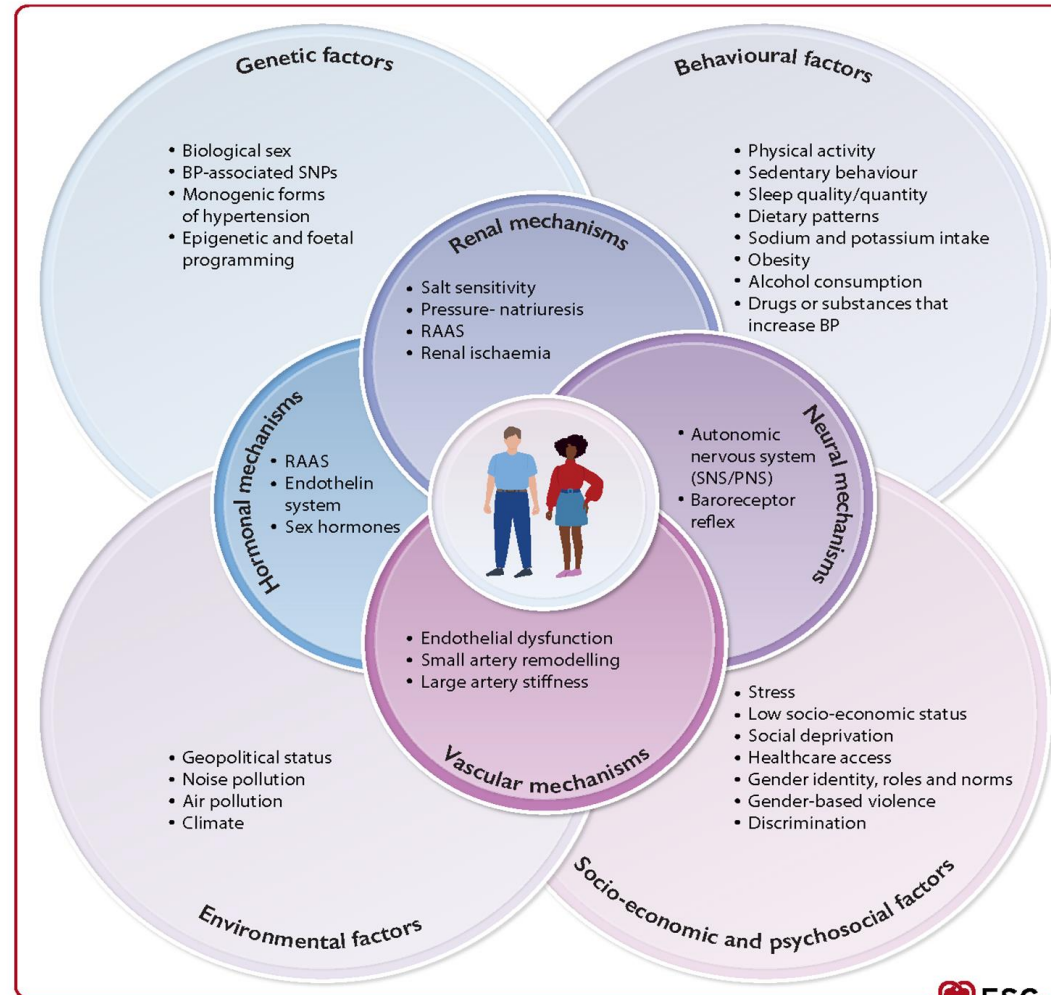
Condition	Short-term safety	Long-term safety	Short-term efficacy	Long-term efficacy
Mild-to-moderate	✓	✓	✓	?
Resistant	✓	✓	✓	?
Atrial fibrillation	?	?	?	?
Heart failure	?	?	?	?
CKD	?	?	?	?

Lauder L et al. *Eur Heart J*, 2023; 44:2066

Outras questões

- efeito nos outcomes cardiovasculares?
- seleção dos doentes
 - pseudo-resistência
 - preditores de resposta
 - risco/benefício individual
- garantir a segurança
- custos?

Terapêuticas inovadoras vs abordagens “inovadoras” na HTA



Obrigada!

