Medscape
EDUCATION GLOBAL

How Do I Manage a 40-Year-Old Patient With Hypertension and Coronary Artery Disease?

FACULTY

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Case Study
Benjamin, 40 Years Old

40 y old
Hypertension and CAD

History	▪ Overweight ▪ 10 pack/y smoking history
Symptoms	▪ Occasional exertional chest pain and mild shortness of breath
Medications	▪ Lisinopril 10 mg/d ▪ HCTZ 25 mg/d ▪ Aspirin 100 mg/d

CAD, coronary artery disease.

Benjamin, 40 Years Old
Hypertension and CAD

Examination

- BMI 29 kg/m^2; waist circumference 104 cm
- **Office BP 159/101 mm Hg**; heart rate 82 bpm
- Normal examination (heart, peripheral vessels)
- No retinopathy

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- **ECG**: Concentric LVH with strain

LVH, left ventricular hypertrophy.

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Lab tests

- Hb 145 g/L
- Fasting glucose 5.83 mmol/L; HbA1c 5.9%
- Uric acid 452 mmol/L
- LDL-C 3.52 mmol/L, HDL-C 1.03 mmol/L; TG 3.19 mmol/L
- Creatinine 114 µmol/L; eGFR 67 mL/min/1.73 m^2
- K^+ 4.5 mmol/L; UACR 50 mg/g

Hb, hemoglobin; HbA1c, glycated hemoglobin; HDL-C, high-density lipoprotein cholesterol; K^+, potassium; LDL-C, low-density lipoprotein cholesterol; LVH, left ventricular hypertrophy; TG, triglyceride; UACR, urine albumin-to-creatinine ratio.

CV Risk According to Hypertension Grade and Stage
Benjamin, Hypertension and CAD

Hypertension Disease Staging	Other Risk Factors, HMOD, CVD, or CKD	BP (mmHg) grading			
		High-Normal SBP 130 to 139 DBP 85 to 89	Grade 1 SBP 140 to 159 DBP 90 to 99	Grade 2 SBP 160 to 179 DBP 100 to 109	Grade 3 SBP ≥ 180 DBP ≥ 110
Stage 1	No other risk factors	Low risk	Low risk	Moderate risk	High risk
	1 or 2 risk factors	Low risk	Moderate risk	Moderate to high risk	High risk
	≥3 risk factors	Low to moderate risk	Moderate to high risk	High risk	High risk
Stage 2	HMOD, CKD grade 3, or diabetes mellitus	Moderate to high risk	High risk	High risk	Very high risk
Stage 3	Established CVD or CKD grade ≥ 4	Very high risk	Very high risk	Very high risk	Very high risk

	< 50 y	60 to 69 y	≥ 70 y	
	< 2.5%	< 5%	< 7.5%	Complementary risk estimation in Stage 1 with SCORE2/SCOR2-OP
	2.5 to < 7.5%	5 to < 10%	7.5 to < 15%	
	≥ 7.5%	≥ 10%	≥ 15%	

Mancia G, et al. J Hypertens. 2023. doi:10.1097/HJH.0000000000003480 [Epub ahead of print].

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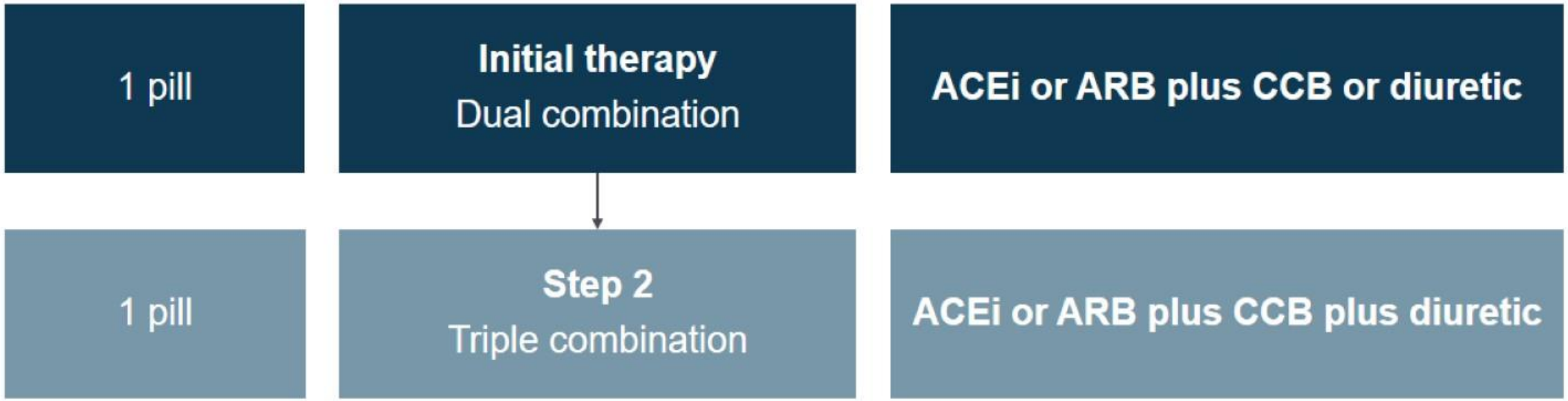
Drug Treatment Strategy — Hypertension and CAD
2018 ESC/ESH Guidelines



Williams B, et al. Eur Heart J. 2018;39:3021-3104.

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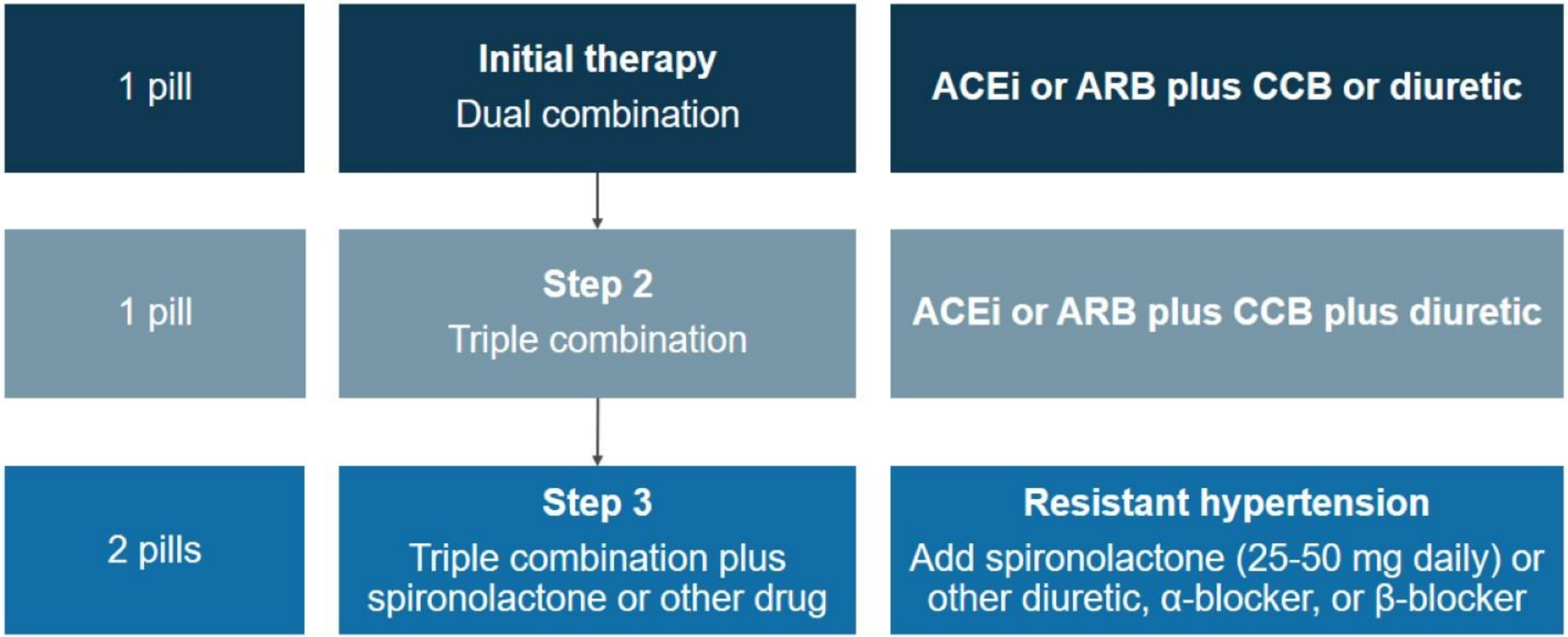

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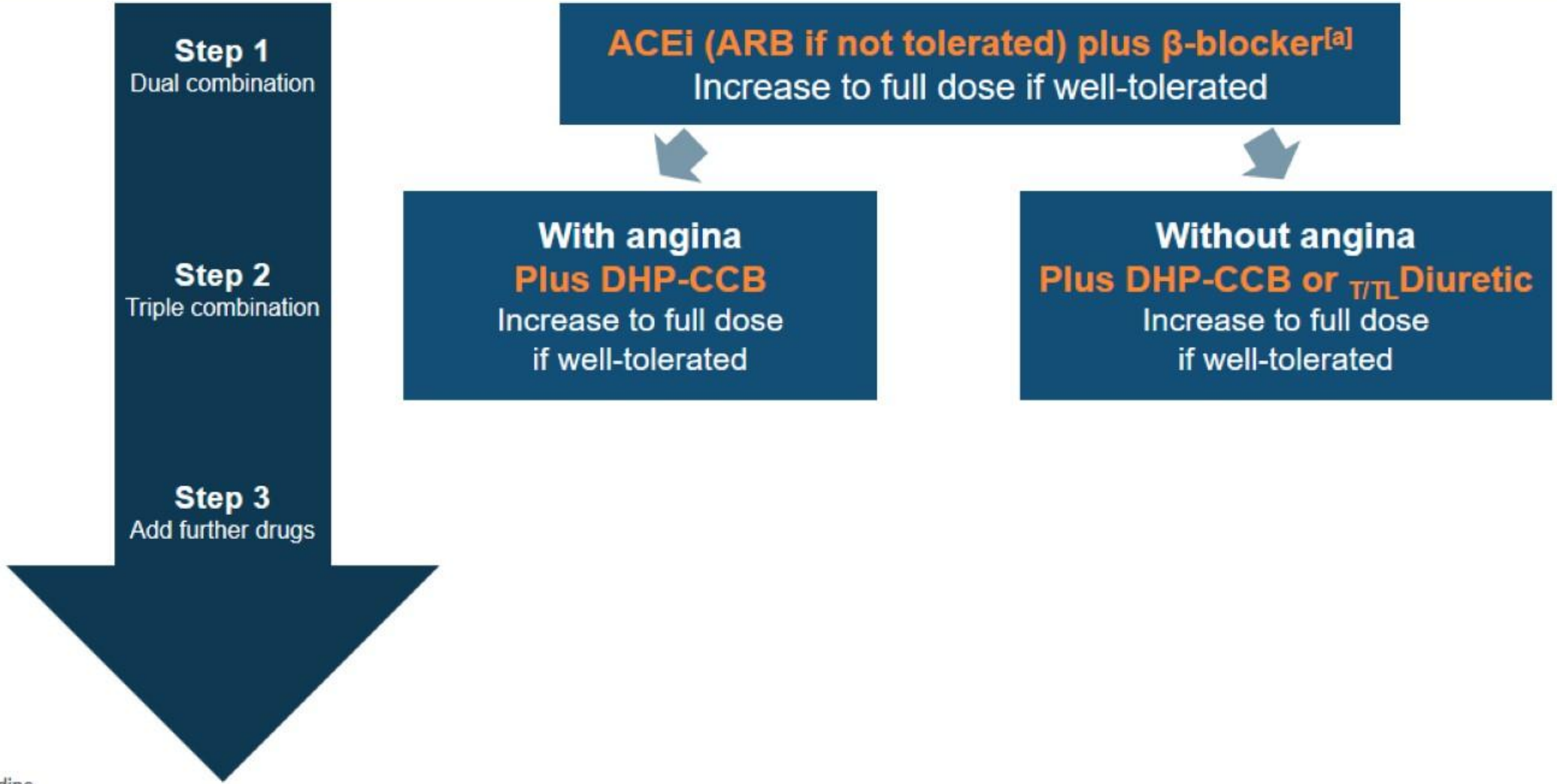
What's New in the 2023 Guidelines?
BP-Lowering in Hypertension and CAD

2023 ESH Guidelines for the Management of Arterial Hypertension



DHP, dihydropyridine.

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What's New in the 2023 Guidelines?
BP-Lowering in Hypertension and CAD

2023 ESH Guidelines for the Management of Arterial Hypertension

Step 1
Dual combination

ACEi (ARB if not tolerated) plus β-blocker[a]
Increase to full dose if well-tolerated

Step 2
Triple combination

With angina
Plus DHP-CCB
Increase to full dose if well-tolerated

Without angina
Plus DHP-CCB or $_{T/TL}$Diuretic
Increase to full dose if well-tolerated

Step 3
Add further drugs

Target heart rate < 80 bpm; if β-blockers are contraindicated or not tolerated, consider use of non-DHP CCB at any step instead of DHP-CCB

DHP, dihydropyridine.

Mancia G, et al. J Hypertens. 2023. doi:10.1097/HJH.0000000000003480 [Epub ahead of print].

BP-Lowering in Hypertension and CAD

2023 ESH Guidelines for the Management of Arterial Hypertension

> Try to put all patients on **single pill combination therapy**, either at **step 1** with a **dual combination** or at **step 2** with a **triple combination**. At step 3 patients will need 2 or more pills per day

Expert opinion.

Clinical Case
Management Decision

- 40 y old
- **Uncontrolled hypertension and CAD**

1. Add β-blocker
2. Add CCB if BP remains uncontrolled

Combined in an SPC if possible (RAS blocker/CCB/diuretic plus β-blocker)

RAS, renin-angiotensin system.
Expert opinion.

SPC vs FEC on Treatment Persistence and MACE
Real-World Analysis

Presented at ESH 2023

Retrospective, observational cohort study using National Health Insurance Fund of Hungary database:
173,206 patients aged ≥ 18 y with hypertension who started on SPC or FEC of ramipril-amlodipine 2012-2018

- Primary composite endpoint: long-term persistence rate between SPC and FEC
- Secondary endpoint: rate of MACE (composite of nonfatal MI, stroke, HHF, and all-cause death)

FEC, free equivalent combination; MACE, major adverse cardiovascular event.
Farsang C, et al. J Hypertens. 2023;41(suppl 3):e81-e81(1).

SPC vs FEC on MACE
Real-World Analysis

Presented at ESH 2023

Secondary Endpoint	R/A 5/5 mg (n = 107,992)		R/A 5/10 mg (n = 13,195)		R/A 10/5 mg (n = 32,342)		R/A 10/10 mg (n = 19,677)	
	HR (95% CI)	*P* Value	HR (95% CI)	*P* Value	HR (95% CI)	*P* Value	HR (95% CI)	*P* Value
MACE	0.7 (0.65, 0.75)	< .001	0.71 (0.58, 0.89)	.002	0.73 (0.64, 0.83)	<.001	0.68 (0.57, 0.8)	<.001

HR, hazard ratio; R/A, ramipril/amlodipine.
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MACE was significantly reduced with all doses of SPC compared with FEC of the same drugs (HR 0.68-0.73; $P \leq .002$).

HR, hazard ratio; R/A, ramipril/amlodipine.
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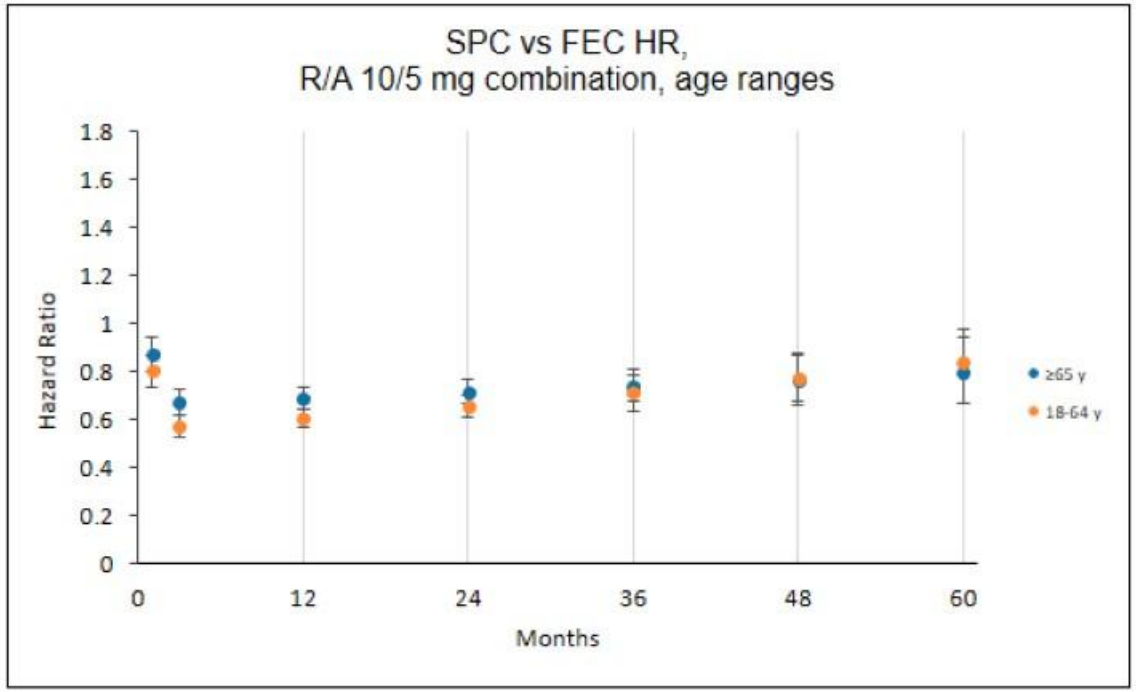
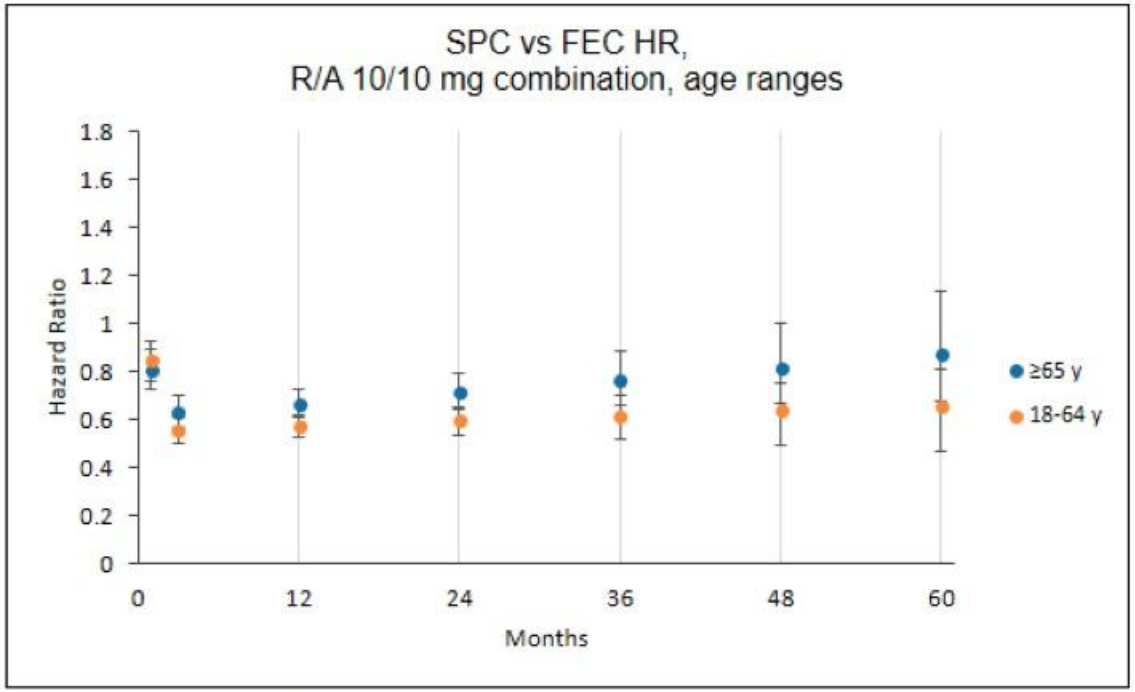
Improved Long-Term Persistence With SPC vs Free Combinations
Real-World Analysis

Presented at ESH 2023

HR (95% CI) by age ranges in the dosage combinations





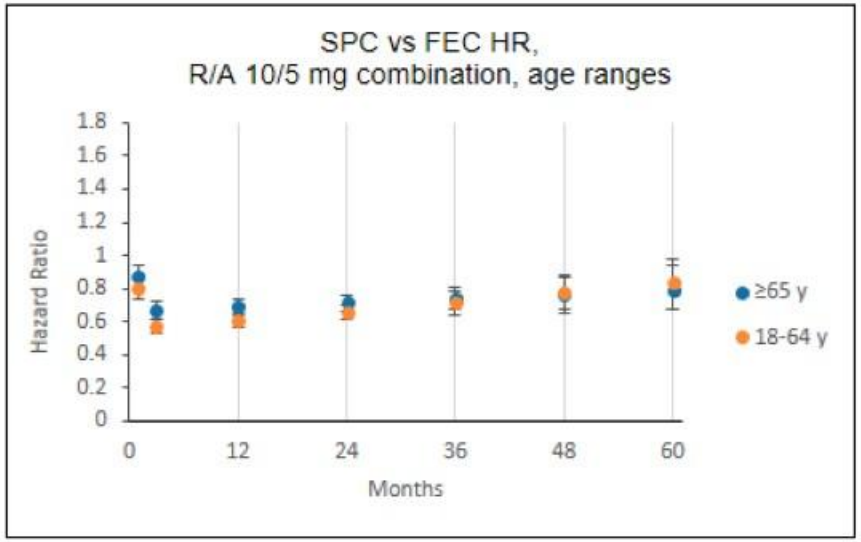
No impact of age ranges on the association between the SPC treatment and persistence rate*

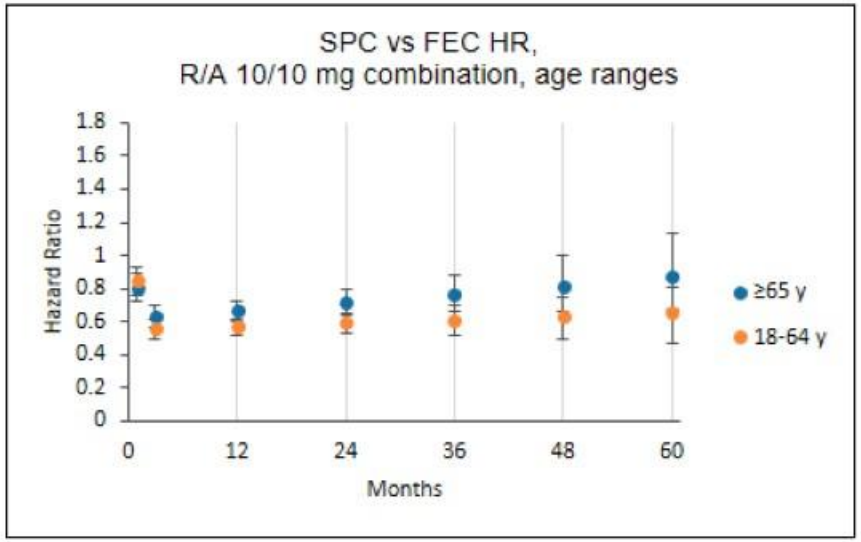
*Persistence measured as the rate of nonpersistence expressed as the hazard ratio.
Figures courtesy of Michel Burnier, MD. Farsang C, et al. J Hypertens. 2023;41(suppl 3):e81-e81(1).

SPC vs FEC on Treatment Persistence
Real-World Analysis

Presented at ESH 2023

HR (95% CI) by age ranges in the dosage combinations[a]





BP values for these patients not known; they might have needed a higher dose of hypertensives due to poor BP control[b]

a. Figures courtesy of Michel Burnier, MD. Farsang C, et al. J Hypertens. 2023;41(suppl 3):e81-e81(1); b. Faculty opinion.

Conclusions

SPCs have a major impact on prognosis in patients with hypertension, adherence, and long-term persistence to therapy

The many SPCs available make it easy to follow the guidelines and treat hypertension effectively

Expert opinion.

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