Heart Failure Preserved Ejection Fraction

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Disclosures

- Speaker Honoraria/Advisory Board:
  - FIRE1
  - Airmed
  - Medtronic
  - Biotronik
  - NICE

Diagnosis and Management of Heart Failure with Preserved Ejection Fraction in Primary Care

Medscape UK X Guidelines
Primary Care Hacks

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Heart failure is a significant global public health crisis

>37M people with HF worldwide[1]

1.5% of entire healthcare expenditure due to hospitalisations for HF[2]

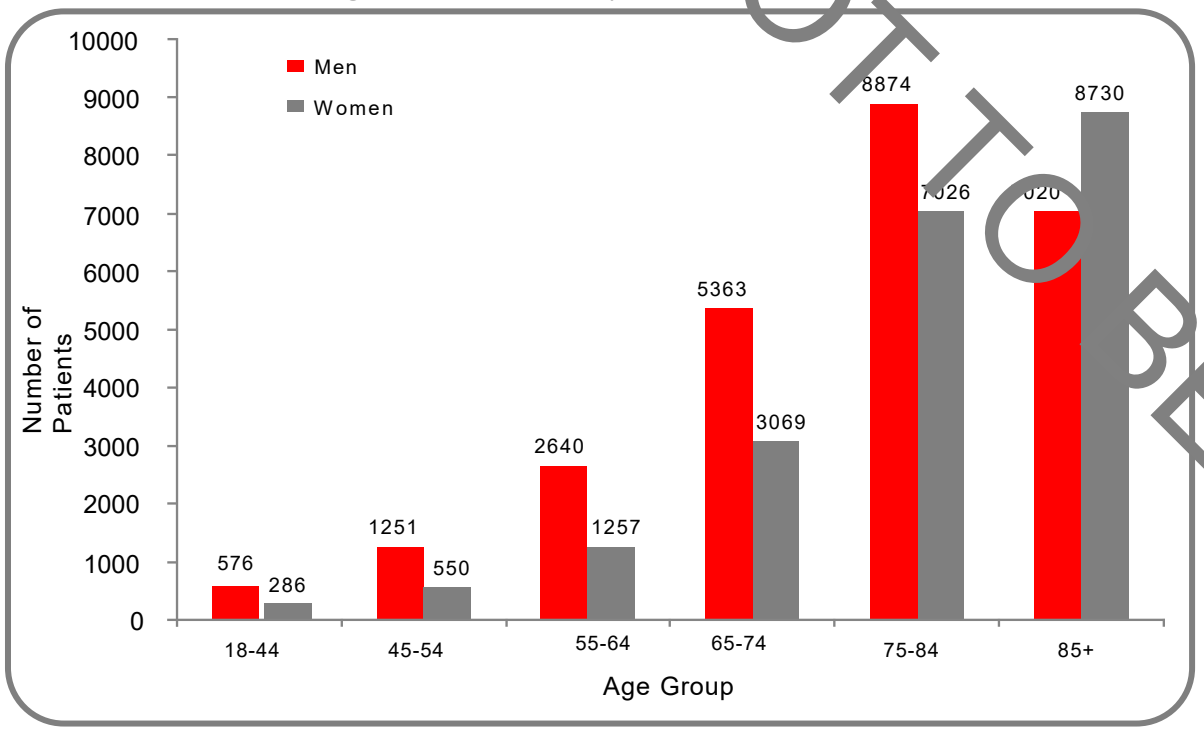
1 in 5 people over the age of 40 will develop HF[3]

HF, Heart Failure

1. Ziaeian B, *et al*. Nat Rev Cardiol. 2016 Jun;13(6):368-78. 2. . National Heart Failure Audit, 2019 Summary Report (2017/18 data), https://www.nicor.org.uk/wp-content/uploads/2019/09/Heart-Failure-2019-Report-final.pdf. 3. Lloyd-Jones DM, *et al*. *Circulation.* 2002;106(24): 3068-72

ACT ON HEART FAILURE

Ageing populations and comorbidities impact on prevalence



Medical History	HFrEF(%)	HFpEF(%)
IHD	46	37
Atrial fibrillation (from ECG)	41	51
Valve disease	27	33
Hypertension	52	61
Diabetes	34	34
COPD	18	20
Asthma	9	9

Mean age - 77.8 years
Median age - 80 years
Mean age men - 75.9 years
Mean age women - 80.2 years

Graphs adapted from:-
National Heart Failure Audit, 2019 Summary Report (2017/18 data), https://www.nicor.org.uk/wp-content/uploads/2019/09/Heart-Failure-2019-Report-final.pdf.

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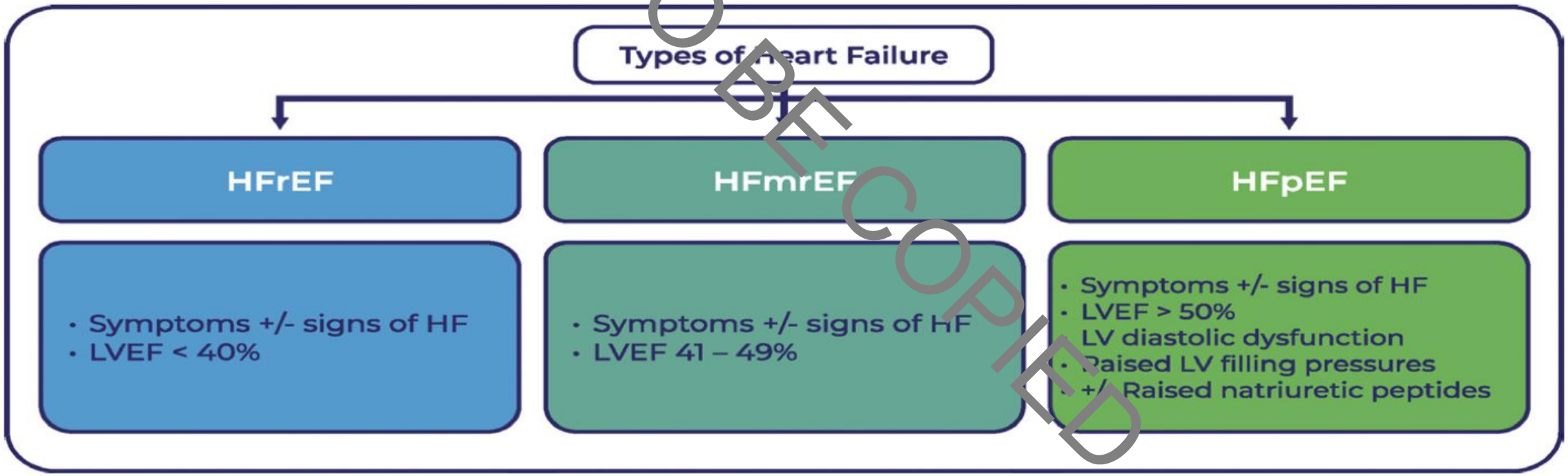
Most common reasons for non- HF referrals

- Elevated Nt-proBNP in the setting of advancing age
- Elevated Nt-proBNP in the setting of renal disease
- Elevated Nt-proBNP in the setting of acute infection
- Oedema secondary to
  - Venous stasis / dependent oedema
  - Renal disease
  - Chronic lymphoedema
  - Medication
- Shortness of breath – in absence of other HF signs and normal BNP

What is heart failure?

Definition

"Signs and symptoms accompanied by structural or functional cardiac defects resulting in altered filling pressures – at rest or on exertion and reduced cardiac output and/or elevated natriuretic peptides"



HFmrEF, mid-range ejection fraction; HFpEF, heart failure with preserved ejection fraction; HFrEF, heart failure with reduced ejection fraction

Chart Adapted from:-

Ponikowski P, et al. *Eur Heart J.* 2016;37:2129–2200 Jasinska-Piadlo A, Campbell P. *Heart* 2023;**0**:1–10. doi:10.1136/heartjnl-2022-321097

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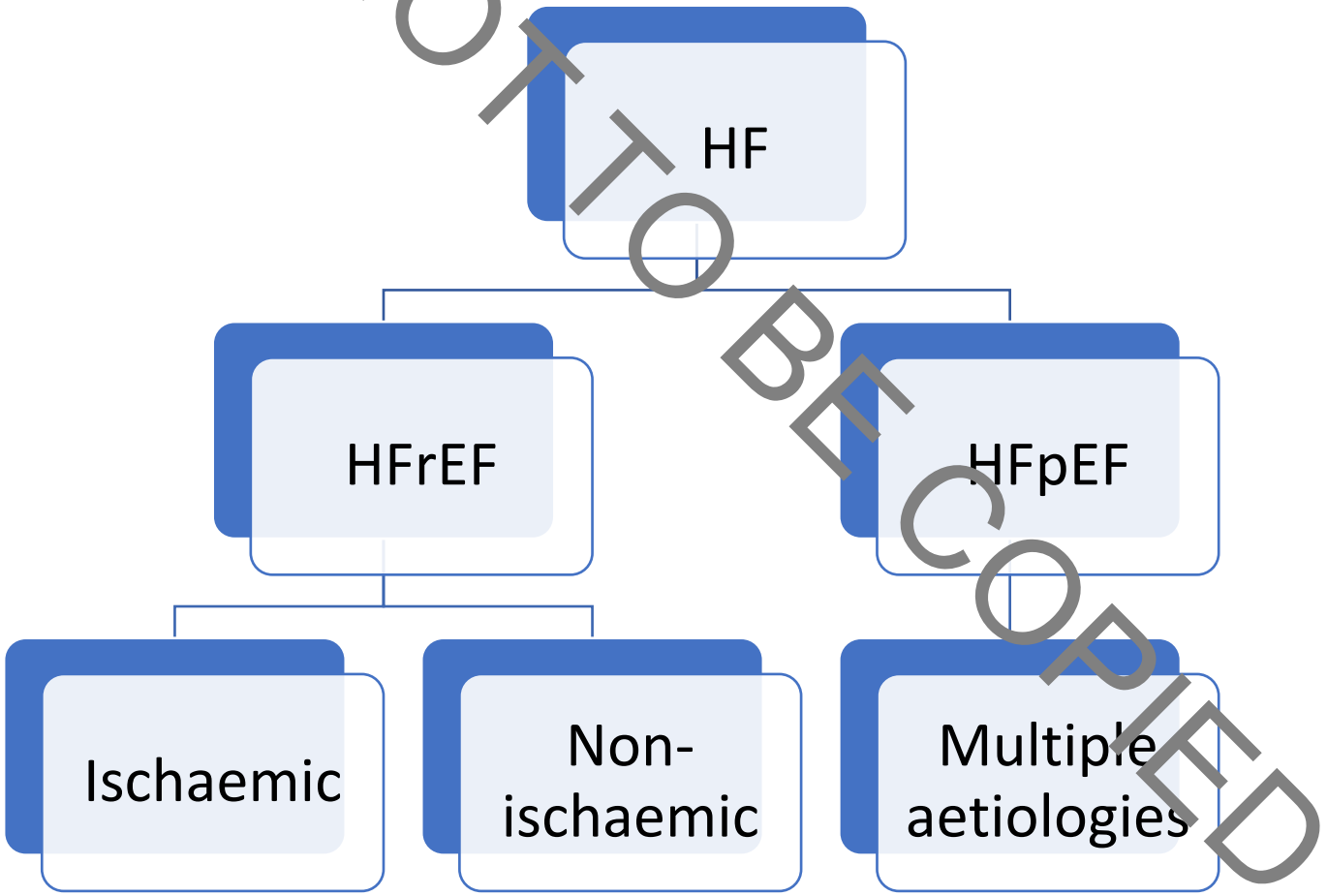
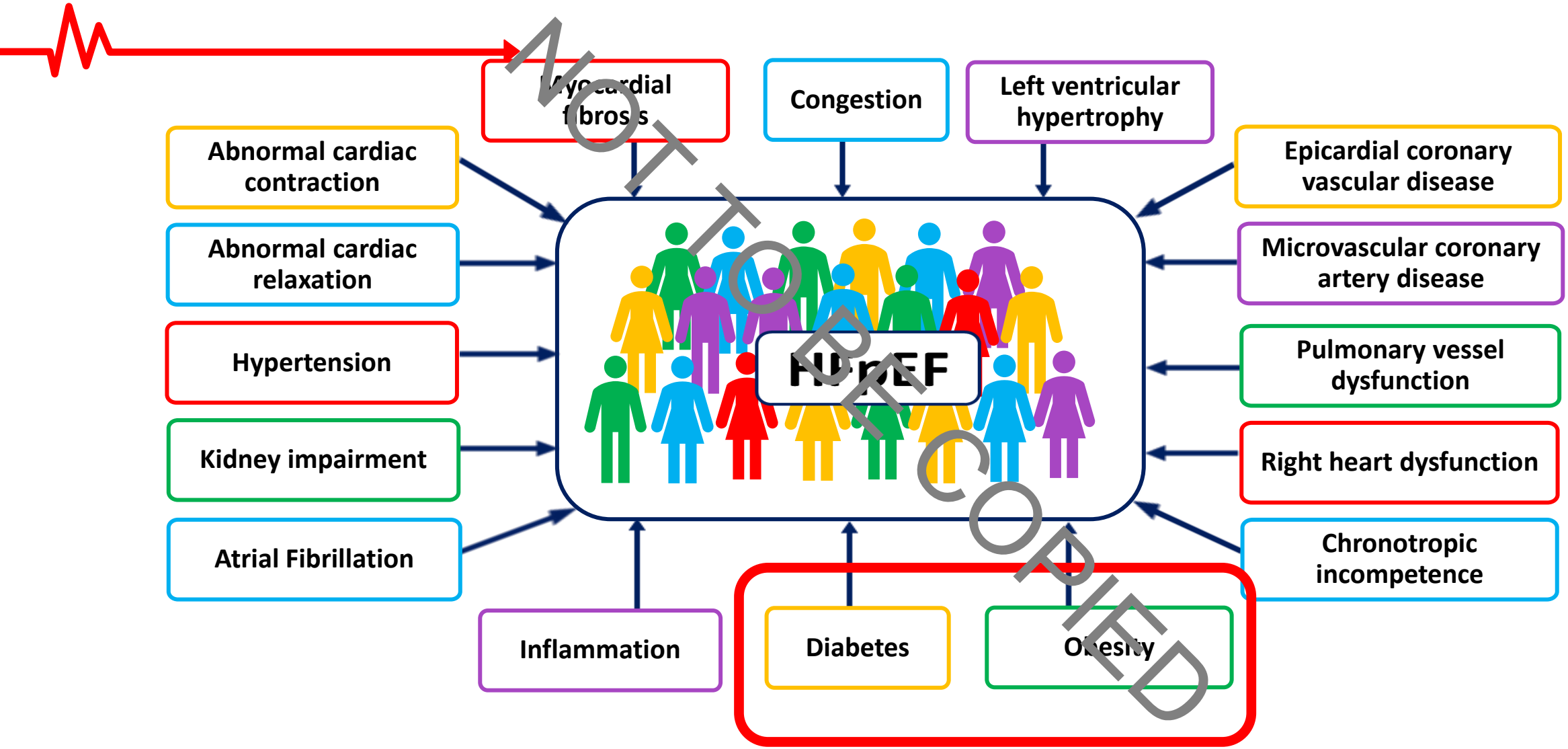
The HF Umbrella



HF Preserved Ejection Fraction

- Accounts for at least 50% HF
- High mortality and hospitalization rates
- Multiple risk factors / shared pathologies
- Often multiple co-morbidities
- Unifying feature is raised LVEDP, impaired relaxation and increased stiffness



Jasinska-Piadlo A, Campbell P. *Heart* 2023;**0**:1–10. doi:10.1136/heartjnl-2022-321097

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67y female

- HTN x 25 years (lercanidipine, perindopril)
- Obesity BMI 37
- T2DM HbA1C 117 (metformin, linagliptin)
- CKD GFR 48

67y female

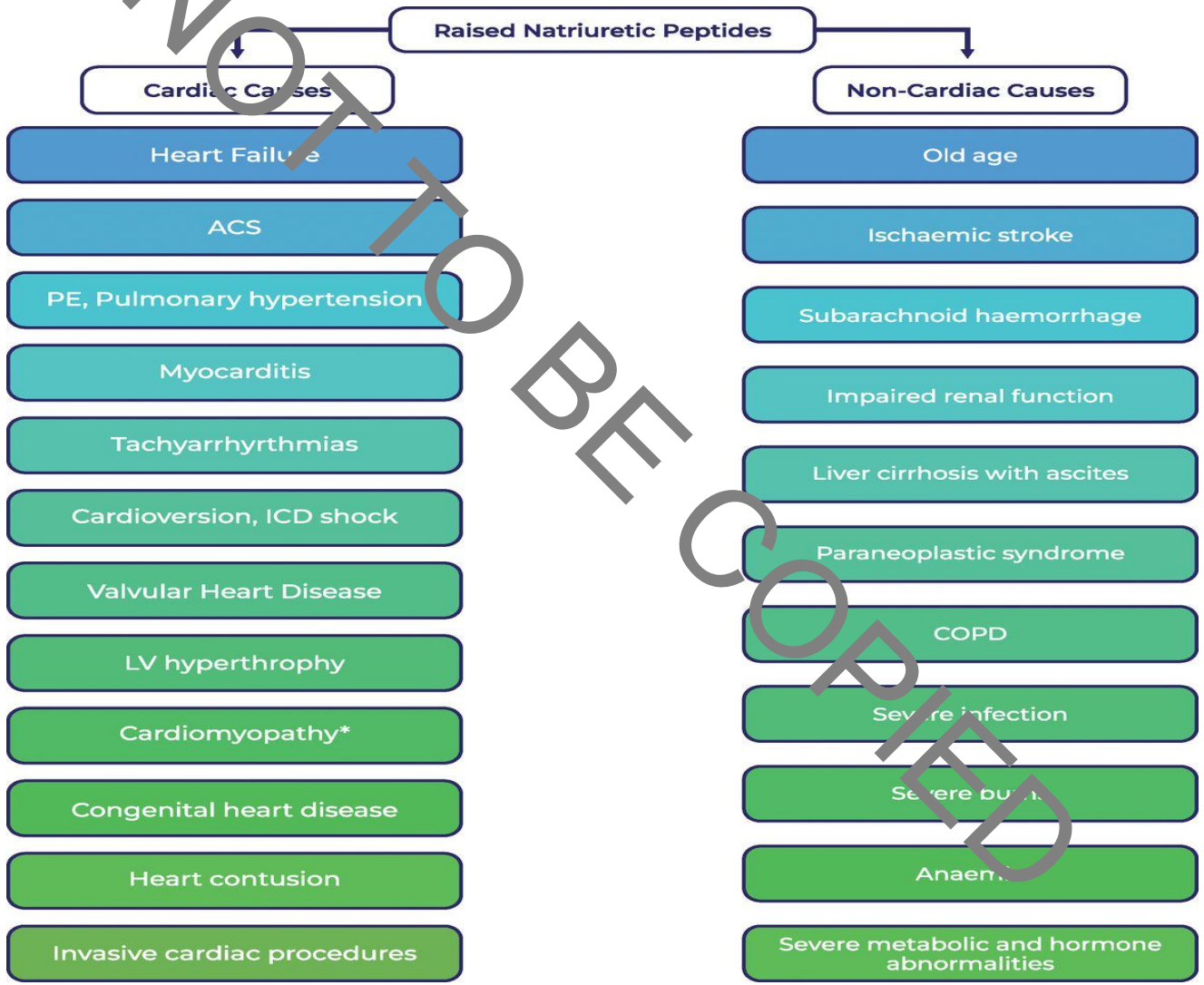
- 4th hospital admission under medical teams in 4 months
- SOBOE, swollen legs
- BP 158/99
- HR 90 sinus
- Soft pan systolic murmur
- Peripheral volume overload

67y female

- Non-anaemic Hb 131
- Normal WBC, inflammatory markers
- GFR 41, Na 130, K 4.7
- Normal thyroid function
- Ferritin 130, Tsat 19%
- CXR upper lobe venous diversion, small bilateral pleural effusions

NTproBNP 1108pg/ml

Nt-ProBNP – *high negative predictive value*



Jasinska-Piadlo A, Campbell P. *Heart* 2023;**0**:1–10. doi:10.1136/heartjnl-2022-321097

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Ejection Fraction

- Only part of assessment of cardiac performance
- 2D imaging of complex 3D structure – multiple technical and interpretative factors
- Who looks at the Stroke volume CO = HR x SV
- Useful to be supplemented with Tissue Doppler, Strain etc

Echo summary:

Preserved LV systolic function.

Mild LVH with diastolic dysfunction.

Mild-moderate TR.

High probability of pulmonary hypertension with estimated RVSP of 58mmHg.

“Pulmonary Hypertension”

Referral sent for review in specialist centre

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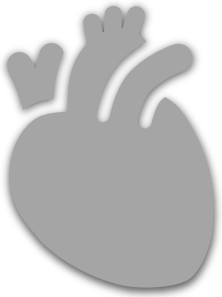
Do we have enough to say she has HFpEF



HFpEF, simply put, is when a person has a diagnosis of heart failure and their LVEF is 50% or higher

ESC definition:

"Those with symptoms and signs of HF, with evidence of structural and/or functional cardiac abnormalities and/or raised natriuretic peptides (NPs), and with an LVEF ≥50%, have HFpEF"

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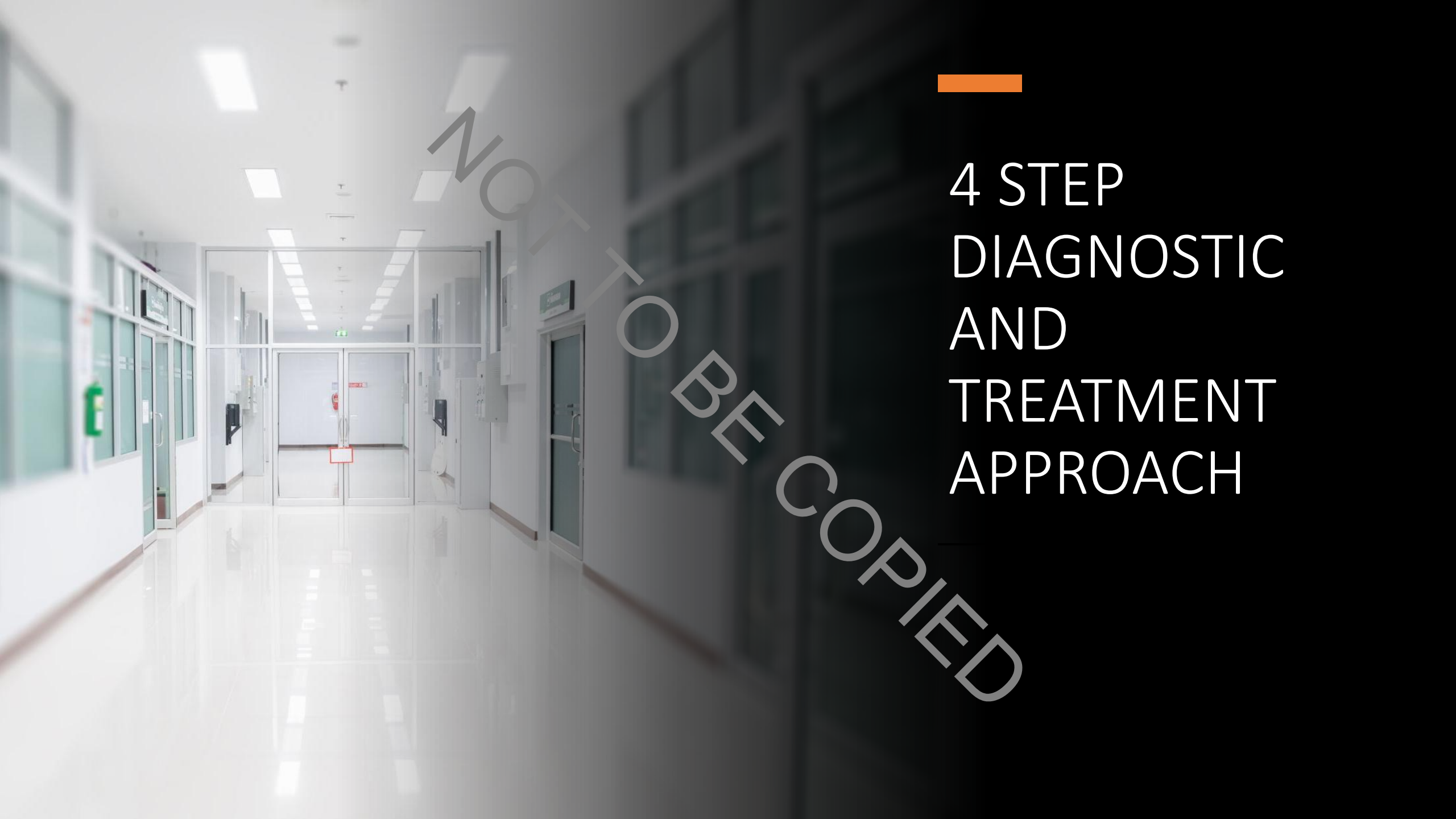
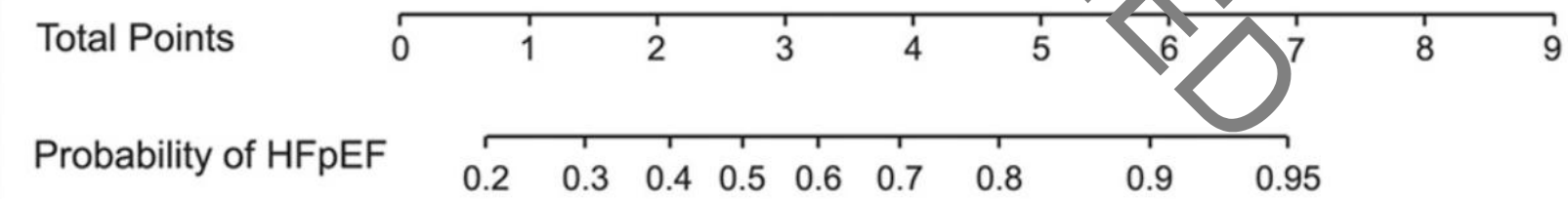


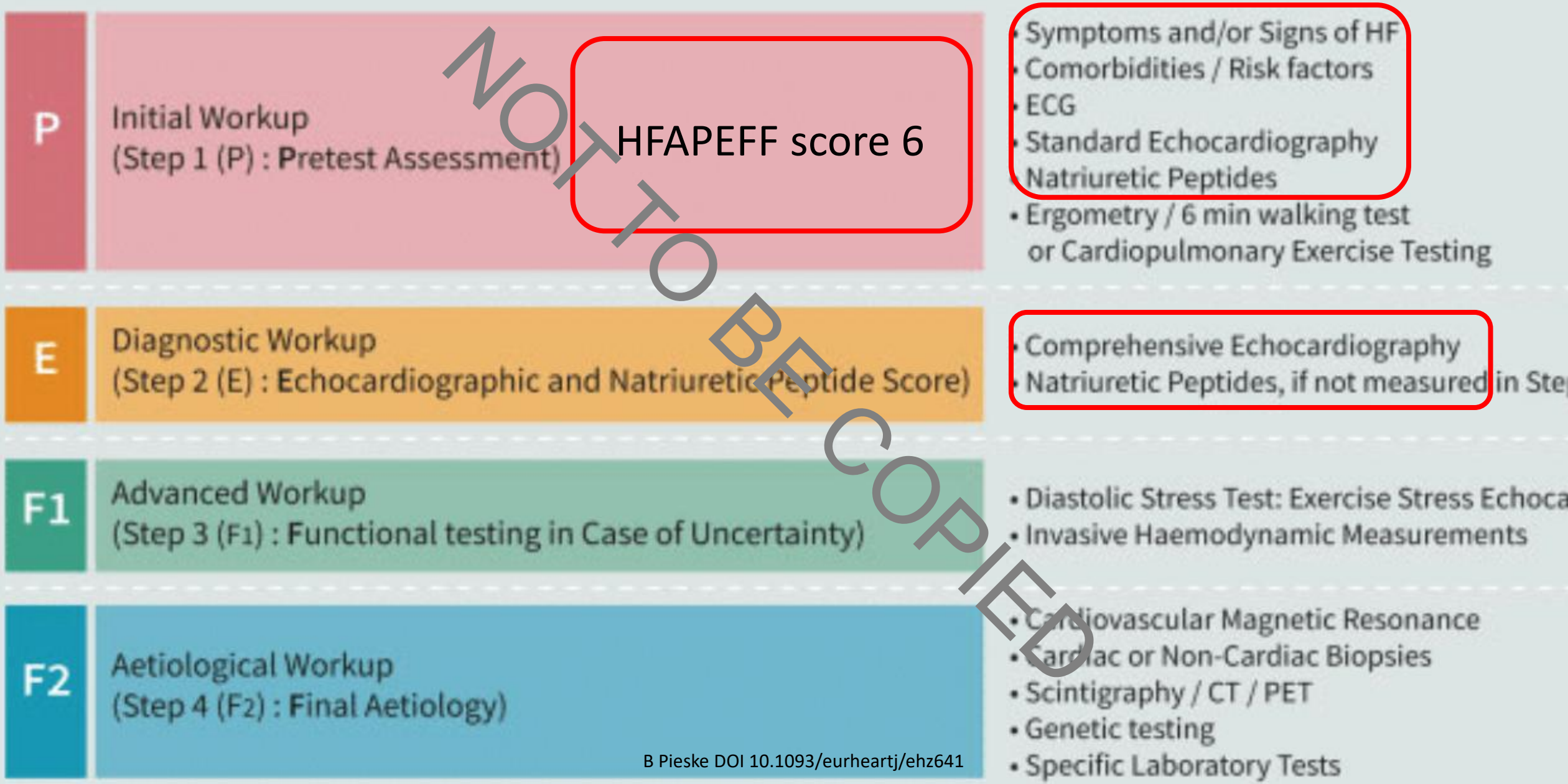
4 STEP DIAGNOSTIC AND TREATMENT APPROACH

	Clinical Variable	Values	Points
H_2	**H**eavy	Body mass index > 30 kg/m^2	2
	Hypertensive	2 or more antihypertensive medicines	1
F	Atrial **F**ibrillation	Paroxysmal or Persistent	3
P	**P**ulmonary Hypertension	Doppler Echocardiographic estimated Pulmonary Artery Systolic Pressure > 35 mmHg	1
E	**E**lder	Age > 60 years	1
F	**F**illing Pressure	Doppler Echocardiographic E/e' > 9	1
H_2FPEF score			Sum (0-9)



H2FPEFF score
6

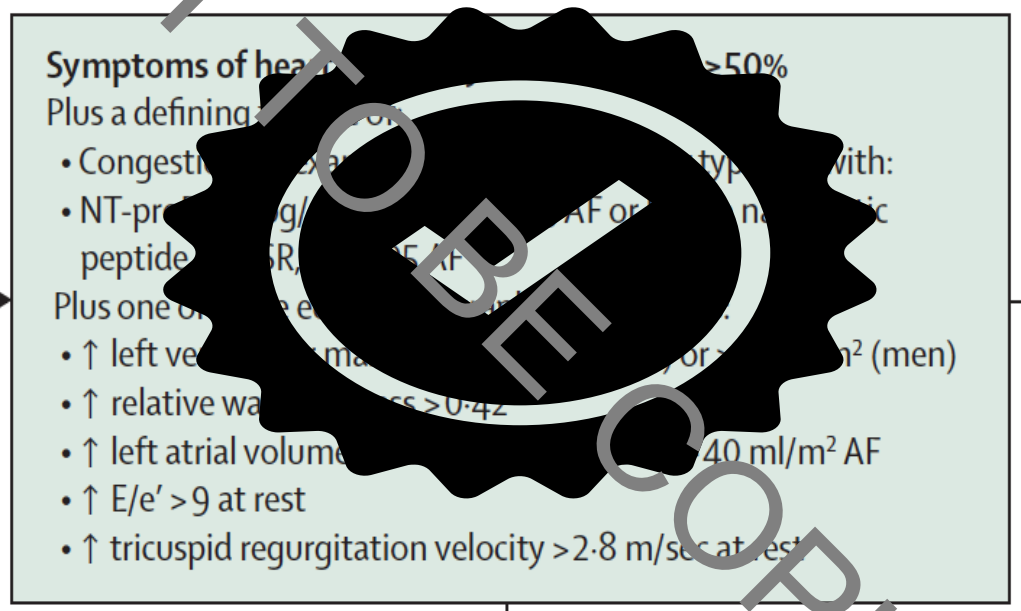
The HFA-PEFF Algorithm for the Diagnosis of HFpEF



STEP 1

STEP 1

80% diagnosed at this stage



HFpEF

CONESTION –
RADIOLOGICALLY AND PERIPHERALLY
BNP ELEVATION
LVH
EF>50%
TRV > 2.8M/S

SIGNS – BIOMARKER – PRESERVED LV FUNCTION

P Campbell. Lancet 2024 doi.org/10.1016/S0140-6736(23)02756-3

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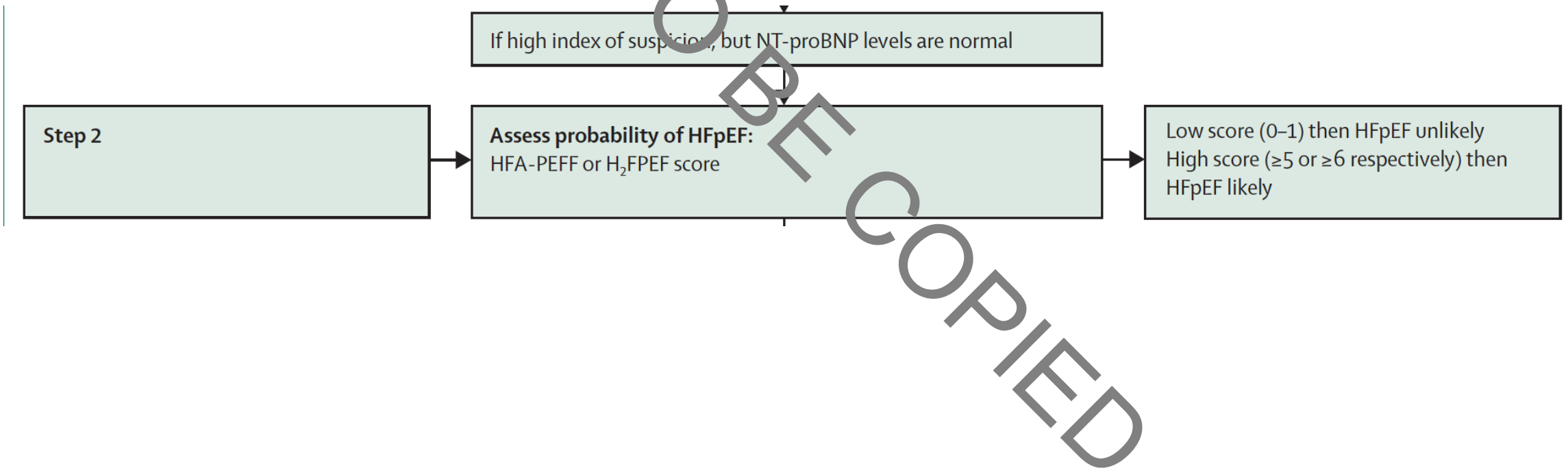
Imagine her NTproBNP was 110 instead of 1108?



P Campbell. Lancet 2024 doi.org/10.1016/S0140-6736(23)02756-3

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HFAPEFF SCORE

	Functional	Morphological	Biomarker (SR)	Biomarker (AF)
Major	septal e' < 7 cm/s or lateral e' < 10 cm/s or Average E/e' ≥ 15 or TR velocity > 2.8 m/s (PASP > 35 mmHg)	LAVI > 34 ml/m² or LVMI ≥ 149/122 g/m² (m/w) and RWT > 0,42	NT-proBNP > 220 pg/ml or BNP > 80 pg/ml	NT-proBNP > 660 pg/ml or BNP > 240 pg/ml
Minor	Average E/e' 9 -14 or GLS < 16 %	LAVI 29-34 ml/m² or LVMI > 115/95 g/m² (m/w) or RWT > 0,42 or LV wall thickness ≥ 12 mm	NT-proBNP 125-220 pg/ml or BNP 35-80 pg/ml	NT-proBNP 365-660 pg/ml or BNP 105-240 pg/ml

Major Criteria: 2 points	≥ 5 points: HFpEF
Minor Criteria: 1 point	2-4 points: Diastolic Stress Test or Invasive Haemodynamic Measurements

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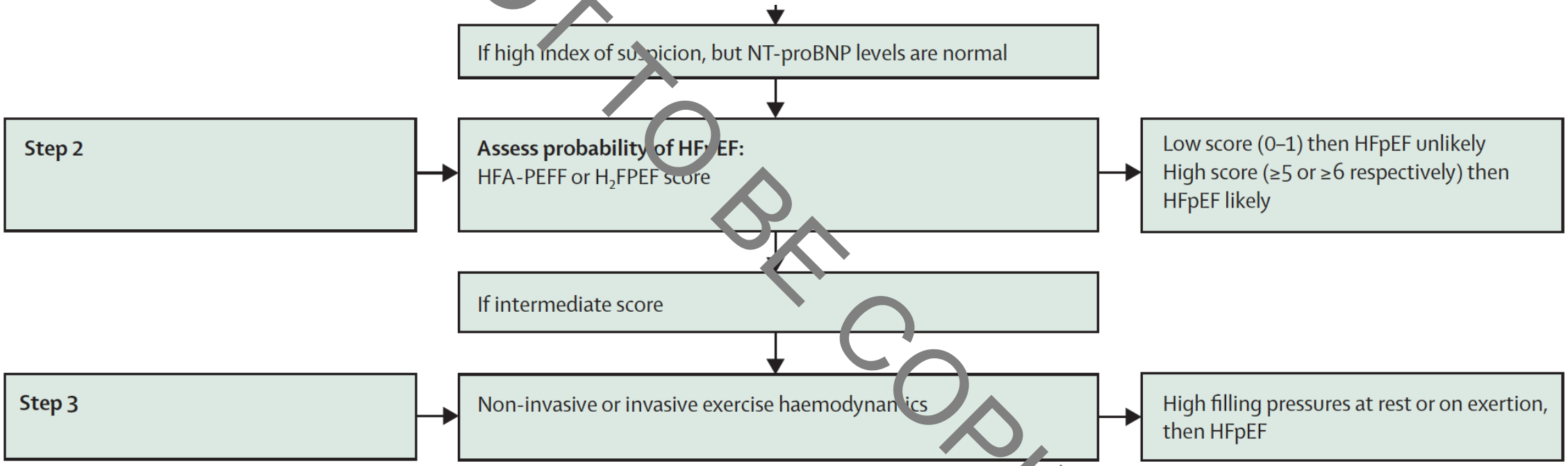
STEP 2 - 3



P Campbell. Lancet 2024 doi.org/10.1016/S0140-6736(23)02756-3

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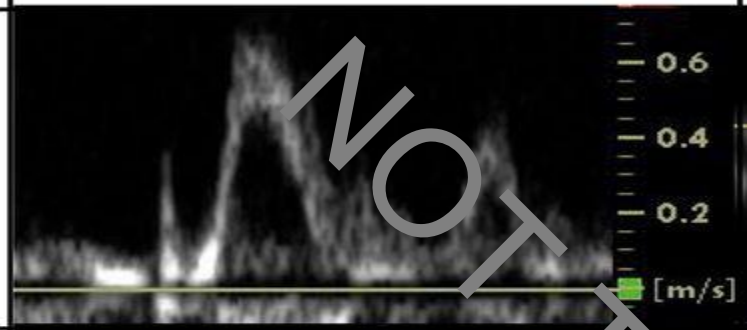
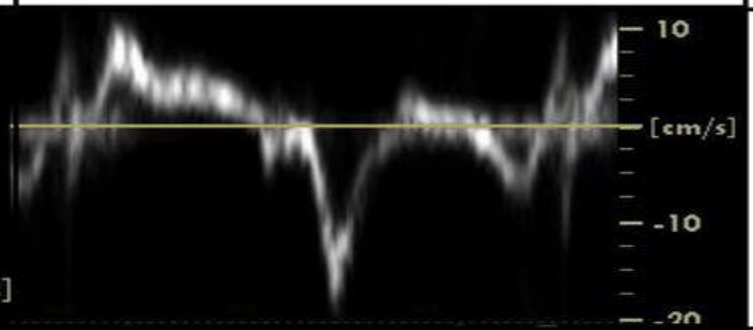
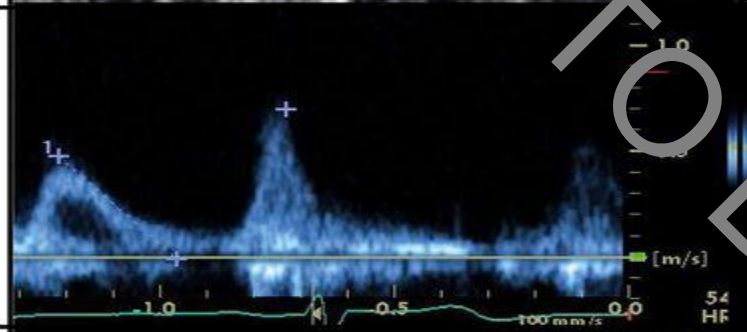
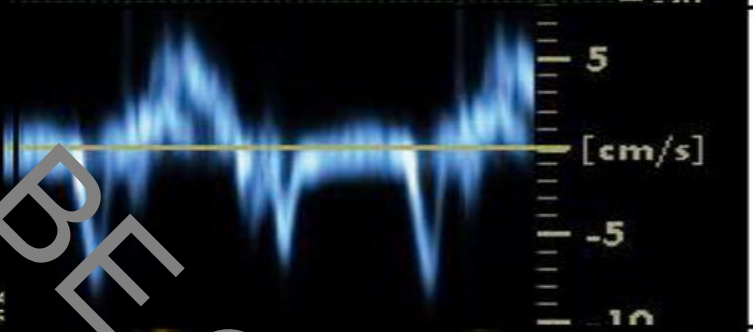
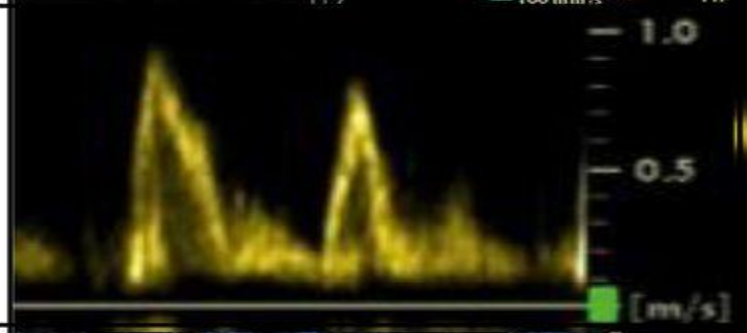
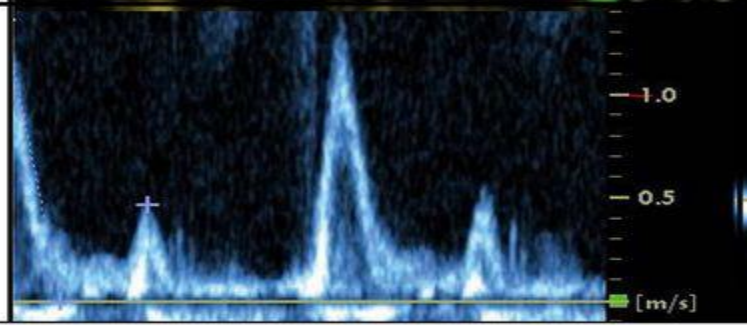
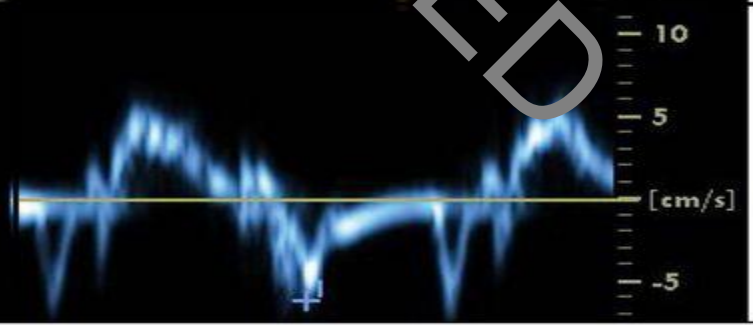
SOUNDS SIMPLE !

POOR ECHO WINDOWS
ARRYTHMIA
COMPLEX VARIABLES
MULTIPLE CO-MORDITIES
NORMAL RESTING PARAMETERS

ACT ON
HEART FAILURE

	TRANSMITRAL PULSE WAVE DOPPLER	MITRAL ANNULAR TISSUE DOPPLER	PEARLS
NORMAL			• E/A > 0.8 • e' velocity is normal for age • E deceleration time is normal
GRADE I DIASTOLIC DYSFUNCTION			• E/A < 0.8 due to impaired relaxation and inability of LV to untwist* • e' velocity is reduced for age • E deceleration time usually prolonged
GRADE II DIASTOLIC DYSFUNCTION **Pseudo-normalisation**			• E/A > 0.8 (often > 1) as a result of increased left atrial pressure • e' velocity is reduced for age • Look for increased E/e' and/or increased LA size to corroborate the diagnosis of grade II diastolic dysfunction
GRADE III DIASTOLIC DYSFUNCTION **Restrictive filling**			• E/A > 1.5-2.0 with very short E deceleration time (< 140 ms) due to severely reduced LV compliance and high LV filling pressure • e' velocity is severely reduced • A wave and a' velocities are reduced due to LA dysfunction

Web Table 4.3 **Normal and abnormal values of echocardiographic indices of diastolic function of left ventricle at rest according to age categories, differentiated for gender. Values are presented as means (± standard deviations) (the cut-offs of these parameters have been derived from the following references).[65,70,72,80–86]**

Parameter	Normal diastolic function						Diastolic dysfunction		
	20–40 years		40–60 years		≥60 years		Impaired relaxation	Pseudo-normal filling	Restrictive filling
	Male	Female	Male	Female	Male	Female			
MV-inflow									
MV-E (m/s)	0.79 ± 0.14	0.84 ± 0.17	0.72 ± 0.16	0.77 ± 0.17	0.67 ± 0.15	0.72 ± 0.17			
MV-A (m/s)	0.50 ± 0.13	0.51 ± 0.12	0.61 ± 0.15	0.63 ± 0.14	0.73 ± 0.16	0.76 ± 0.16			
DecT (m/s)	179.8 ± 46.4	176.7 ± 40.1	186.6 ± 52.8	188.4 ± 39.8	217.5 ± 69.7	201.5 ± 55.7	>220	140–220	<140
E/A ratio (m/s)	1.69 ± 0.52	1.72 ± 0.52	1.22 ± 0.31	1.25 ± 0.43	0.96 ± 0.27	0.99 ± 0.31	<1.0	1.0–2.0	>2.0
Ivrt (m/s)							>110	60-100	<60
Tissue Doppler									
e' septal (cm/s)	11.9 ± 2.7	12.3 ± 2.3	9.8 ± 2.6	9.7 ± 2.5	7.3 ± 2.2	7.9 ± 2.3	<8	<8	<8
e' lateral (cm/s)	16.2 ± 3.6	16.6 ± 3.2	12.6 ± 3.0	12.4 ± 3.0	9.5 ± 2.1	9.7 ± 3.2	<10	<10	<10
e' mean sept-lat (cm/s)	14.0 ± 2.9	14.5 ± 2.4	11.2 ± 2.4	11.1 ± 2.5	8.5 ± 1.9	8.8 ± 2.6			
E/e' septal	6.9 ± 1.7	6.9 ± 1.6	7.8 ± 2.4	8.2 ± 2.2	9.8 ± 3.0	9.7 ± 2.6			
E/e' lateral	5.0 ± 1.3	5.2 ± 1.3	6.1 ± 2.2	6.5 ± 2.3	7.6 ± 2.1	7.9 ± 2.2			
E/e' mean sep-lat	5.8 ± 1.4	5.9 ± 1.3	6.7 ± 2.1	7.2 ± 2.0	8.4 ± 2.2	8.6 ± 2.2		≥13	≥13

DecT = deceleration time of MV-E; e' = early diastolic tissue velocity; E/e' = a ratio between early mitral inflow velocity and mitral annular early diastolic velocity; IVRT = isovolumetric relaxation time; MV = mitral valve; MV-A = mitral valve late diastolic inflow; MV-E = mitral valve early diastolic inflow.

SO NOW WHAT ?

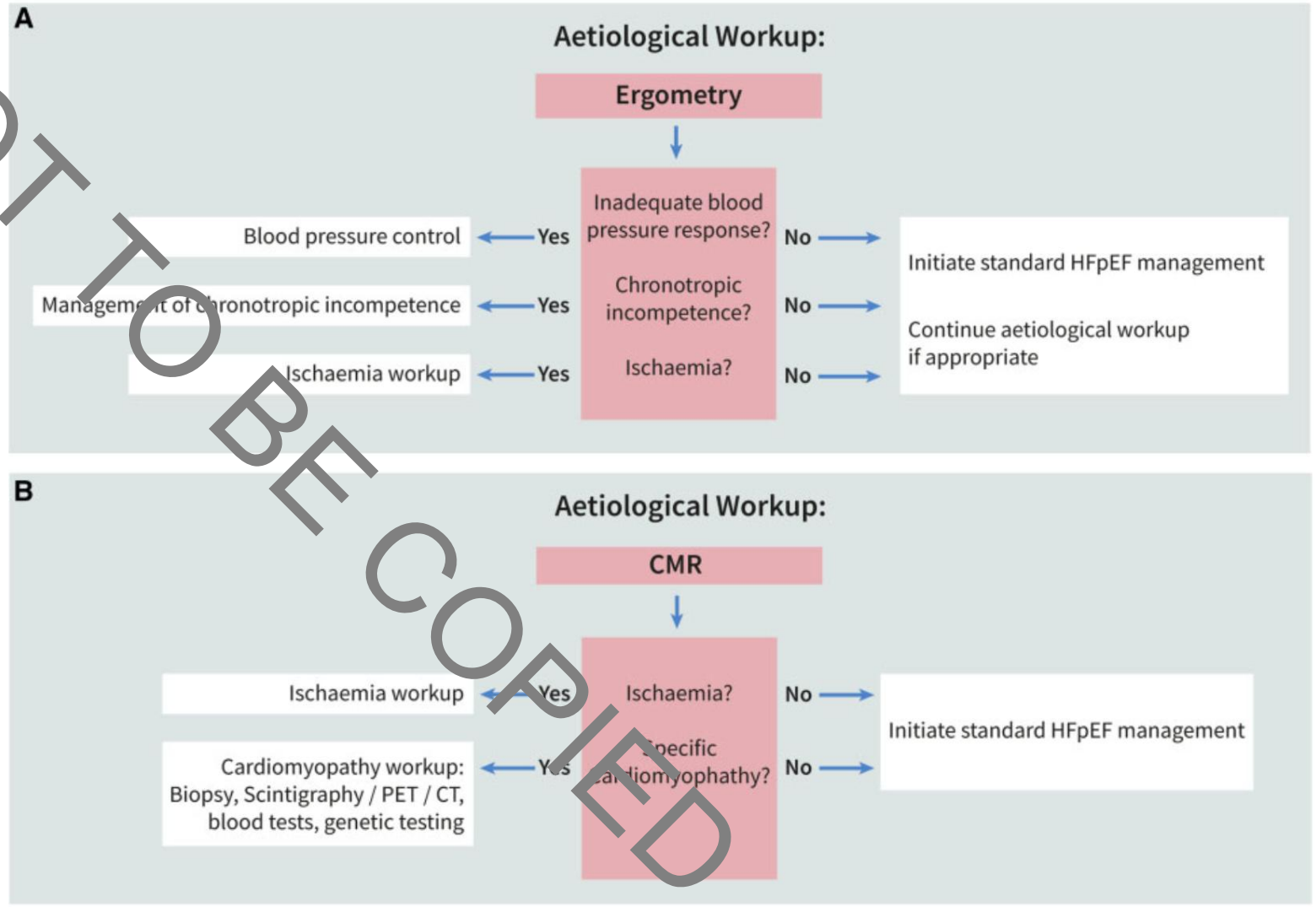
DO WE NEED TO LOOK FURTHER / UNDERTAKE MORE TESTS

DO THEY NEED ROUTINE FOLLOW UP

WHAT ARE THE TREATMENT OPTIONS

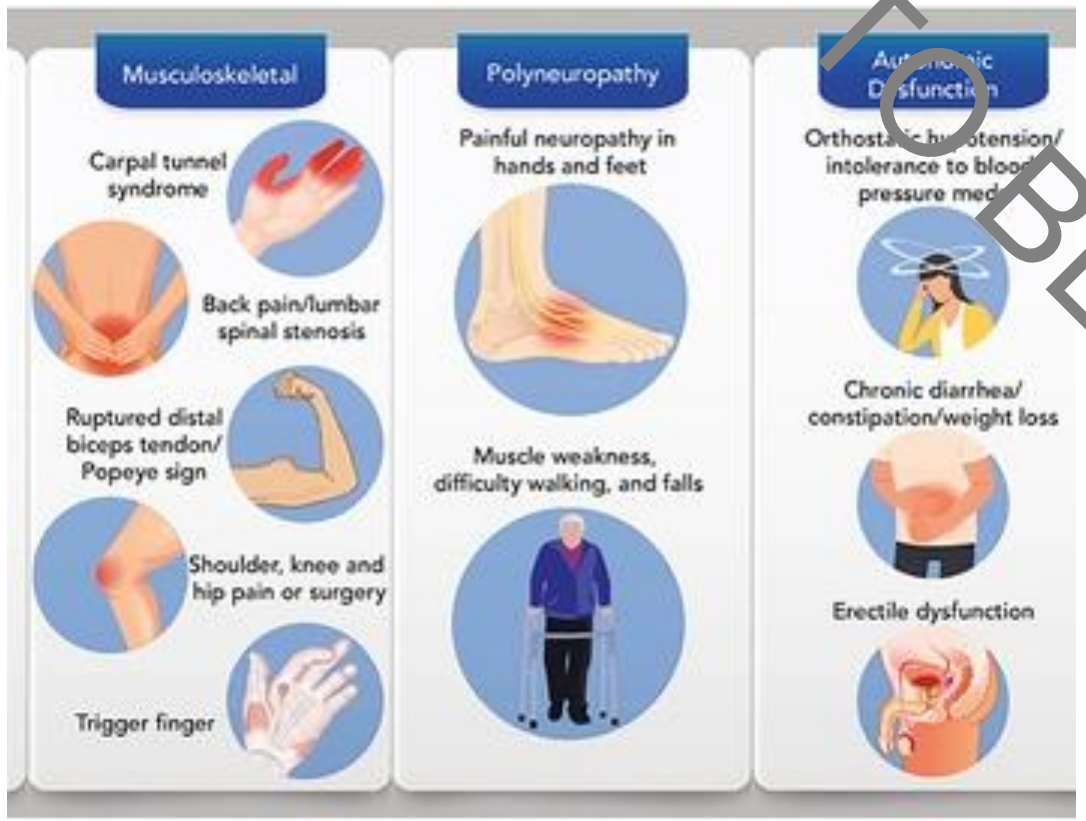
Aetiology workup

- Ischaemia
- toxins
- infiltration
- Hypertension
- High output disorders
- Metabolic disorders
- Immune/ inflammatory



ACT ON HEART FAILURE

Clinical hints – symptoms of potential TTR

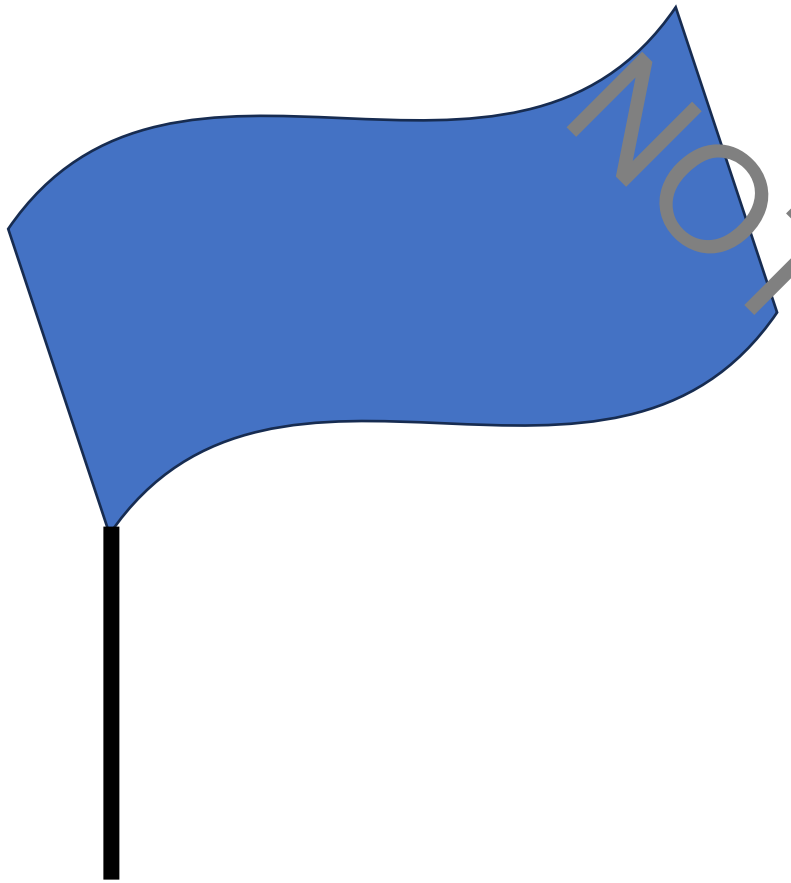


Michelle M. Kittleson et al. *JACC* 2023; 81:1076-1126.

Biceps rupture and spinal stenosis relatively unique to ATTR vs AL

CTS association with amyloid remains unclear 1.2%-37%

- varying with ethnicity
- age
- bilateral involvement



"Red flags" for ATTR-CM

- Reduction in longitudinal strain with apical sparing
- Discrepancy between left ventricular thickness and QRS voltage (with a lack of left ventricular hypertrophy on EKG)
- Atrioventricular block, in the presence of increased left ventricular wall thickness
- Echocardiographic hypertrophic phenotype with associated infiltrative features, including increased thickness of the atrioventricular valves, interatrial septum and right ventricular free wall
- Marked extracellular volume expansion, abnormal pooling time for the myocardium or diffuse late gadolinium enhancement on CMR
- Symptoms of polyneuropathy and / or dysautonomia
- History of bilateral carpal tunnel syndrome
- Mild increase in troponin levels on repeated occasions

"Red flags" that further support the possibility of an underlying ATTR-CM. ATTR-CM = transthyretin amyloid cardiomyopathy; CMR = cardiac magnetic resonance imaging; EKG = electrocardiogram.

May occur 10 years before onset of cardiomyopathy

Biomarker clues

- persistent troponin elevation
- BNP disproportionately raised compared to HF degree

Web Table 9.1 **Phase II and III clinical trials performed in patients with heart failure with mid-range ejection fraction and heart failure with preserved ejection fraction**

Trial	Intervention	Major inclusion criteria	Mean follow-up	Primary endpoints
PEP-CHF[320]	Perindopril vs placebo.	LV wall motion index ≥1.4 (corresponding to LVEF ≥40%), symptomatic HF treated with diuretic, diastolic dysfunction in echocardiography, age ≥70 y.	2.1 y	No difference in combined all-cause mortality or cardiovascular hospitalization (36% vs 37%, P =0.35).
I-PRESERVE [318]	Irbesartan vs placebo.	LVEF ≥45%, NYHA III–IV with corroborative evidence, or NYHA II with HF hospitalization in recent 6 months, age ≥60 y.	4.1 y	No difference in combined all-cause mortality or HF hospitalization (24% vs 25%, P =0.54).
CHARM-Preserved[319]	Candesartan vs placebo.	LVEF >40%, NYHA II–IV, history of cardiac hospitalization.	3.0 y	Trend towards a reduction in combined cardiovascular mortality or HF hospitalization by 11% (22% vs 24%, unadjusted P =0.12, adjusted P =0.051).
Aldo-DHF[330]	Spironolactone vs placebo.	LVEF ≥50%, NYHA II–III, peak VO_2 ≤25 mL/min/kg, diastolic dysfunction on echocardiography or atrial fibrillation, age ≥50 y.	1.0 y	Reduction in E/e' by −1.5 (P < 0.001) No change in peak VO_2 (P =0.81).
TOPCAT[310]	Spironolactone vs placebo.	LVEF ≥45%, ≥1 HF sign, ≥1 HF symptom, HF hospitalization within recent 12 months, or BNP ≥100 pg/mL or NT-proBNP ≥360 pg/mL, age ≥50 y.	3.3 y	No difference in combined cardiovascular death, aborted cardiac arrest, or HF hospitalization (19% vs 20%, P =0.14).
SENIORS[173]	Nebivolol vs placebo.	HF confirmed as HF hospitalization in recent 12 months and/or LVEF ≤35% in recent 6 months, age ≥70 y, 36% with LVEF >35%.	1.8 y	Reduction in combined all-cause mortality or cardiovascular hospitalization by 14% (31% vs 35%, P =0.04).
DIG-PEF[323]	Digoxin vs placebo.	HF with LVEF >45%, sinus rhythm.	3.1 y	No difference in combined HF mortality or HF hospitalization (21% vs 24%, P =0.14)
PARAMOUNT[309]	Sacubitril/valsartan vs valsartan.	HF with LVEF ≥45%, NYHA II-III, NT-proBNP >400 pg/mL.	1.2 y	Reduction in NT-proBNP: ratio of change sacubitril/valsartan 0.77, 95% CI 0.64–0.92 (P =0.005).
RELAX[311]	Sildenafil vs placebo.	HF with LVEF ≥45%, NYHA II-IV, peak VO_2 <60% of reference values, NT-proBNP >400 pg/mL or high LV filling pressures.	24 w	No change in peak VO_2 (P =0.90).

Aldo-DHF = Aldosterone Receptor Blockade in Diastolic Heart Failure; BNP = B-type natriuretic peptide; CHARM-Preserved = Candesartan Cilexetil in Heart Failure Assessment of Reduction in Mortality; DIG-PEF = ancillary Digitalis Investigation Group trial; HF = heart failure; I-PRESERVE = Irbesartan in Heart Failure with Preserved Ejection Fraction Study; LAVI = left atrial volume index; LV = left ventricular; LVEF = left ventricular ejection fraction; LVMI = left ventricular mass index; NT-proBNP = N-terminal pro-B type natriuretic peptide; NYHA = New York Heart Association; PARAMOUNT = LCZ696 Compared to Valsartan in Patients With Chronic Heart Failure and Preserved Left-ventricular Ejection Fraction; Peak VO_2 = peak oxygen uptake; PEP-CHF = Perindopril in Elderly People with Chronic Heart Failure; RELAX = Phosphodiesterase-5 Inhibition to Improve Clinical Status and Exercise Capacity in Diastolic Heart Failure; SENIORS = Study of the Effects of Nebivolol Intervention on Outcomes and Rehospitalisations in Seniors with Heart Failure; TOPCAT = Treatment of Preserved Cardiac Function Heart Failure with an Aldosterone Antagonist; w = week; y = year.

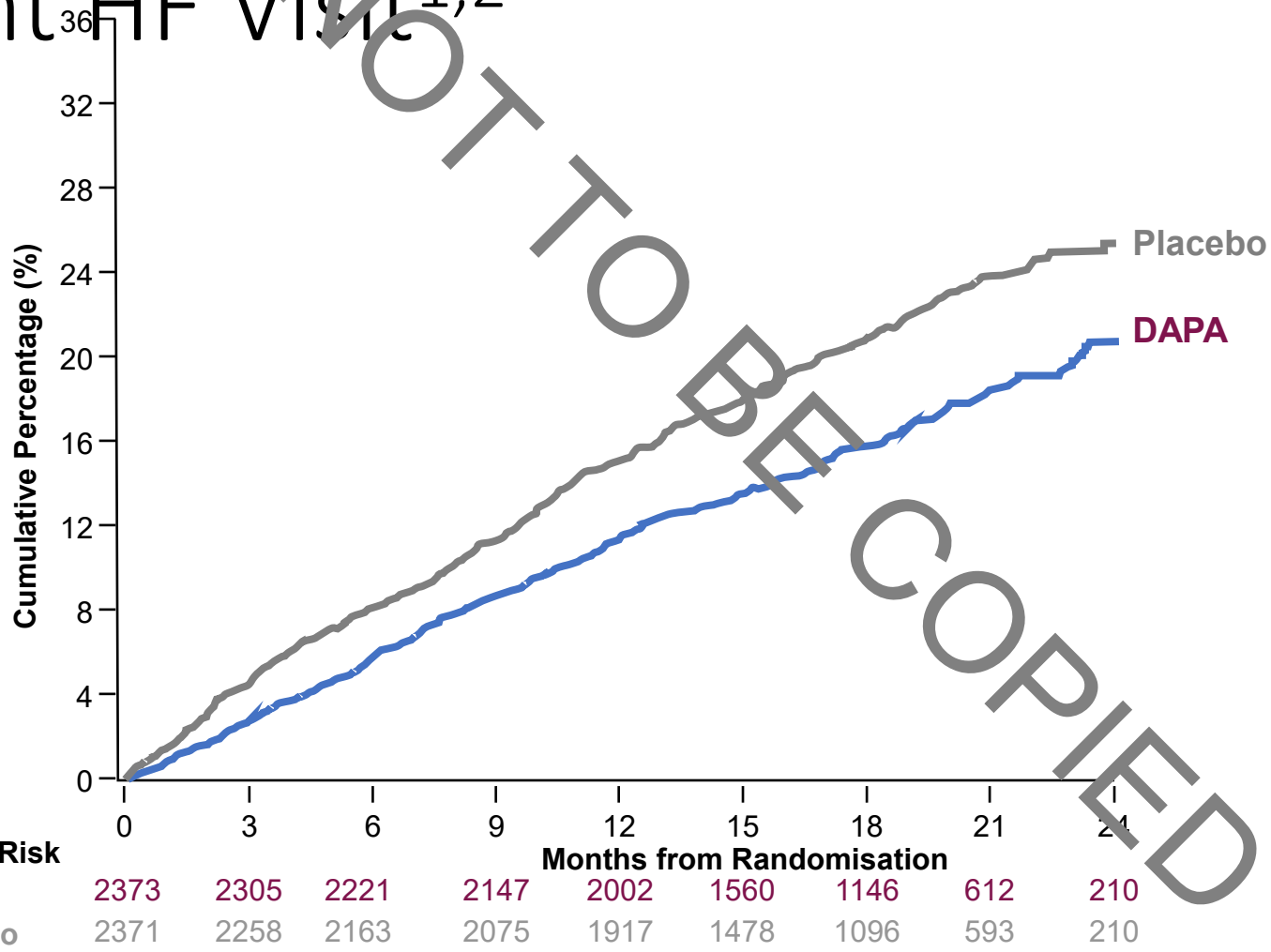
	Left ventricular ejection fraction	Left ventricular hypertrophy	Left atrium enlargement	Elevated filling pressures	Natriuretic peptide level (pg/mL)
EMPEROR-Preserved (2021)[3]	>40%	Septal or posterior wall thickness ≥1·1 cm; left ventricular mass index ≥95 g/m² (women) and ≥115 g/m² (men)	Width ≥4·0 cm; length ≥5·0 cm; area ≥20·0 cm²; volume ≥55 mL or volume index ≥34 mL/m²	E/e' (mean septal and lateral) ≥13; e' (mean septal and lateral) <9 cm/s	NT-proBNP >300 (no atrial fibrillation) or >900 (with atrial fibrillation)
DELIVER (2022)[4]	>40%	Septal or posterior wall thickness ≥1·1 cm	Width (diameter) ≥3·8 cm, length ≥5·0 cm; volume ≥55 mL or volume index ≥29 mL/m²	NA	NT-proBNP ≥300 (no atrial fibrillation or flutter) or ≥600 (with atrial fibrillation or flutter)

e'=early diastolic mitral annulus velocity. E/e'=early diastolic mitral inflow velocity to early diastolic mitral annulus velocity. HFpEF=heart failure with preserved ejection fraction. NA=not applicable. NT-proBNP=N-terminal pro-B type natriuretic peptide. SGLT2i=SGLT2 inhibitor.

Table: **HFpEF definitions in recent clinical trials of SGLT2 inhibitors**

P Campbell. Lancet 2024 doi.org/10.1016/S0140-6736(23)02756-3

Primary Endpoint: CV Death or hHF or an Urgent HF Visit[1,2]



26% RRR

HR 0.74 (0.65, 0.85)
p=0.00001

NNT = 21

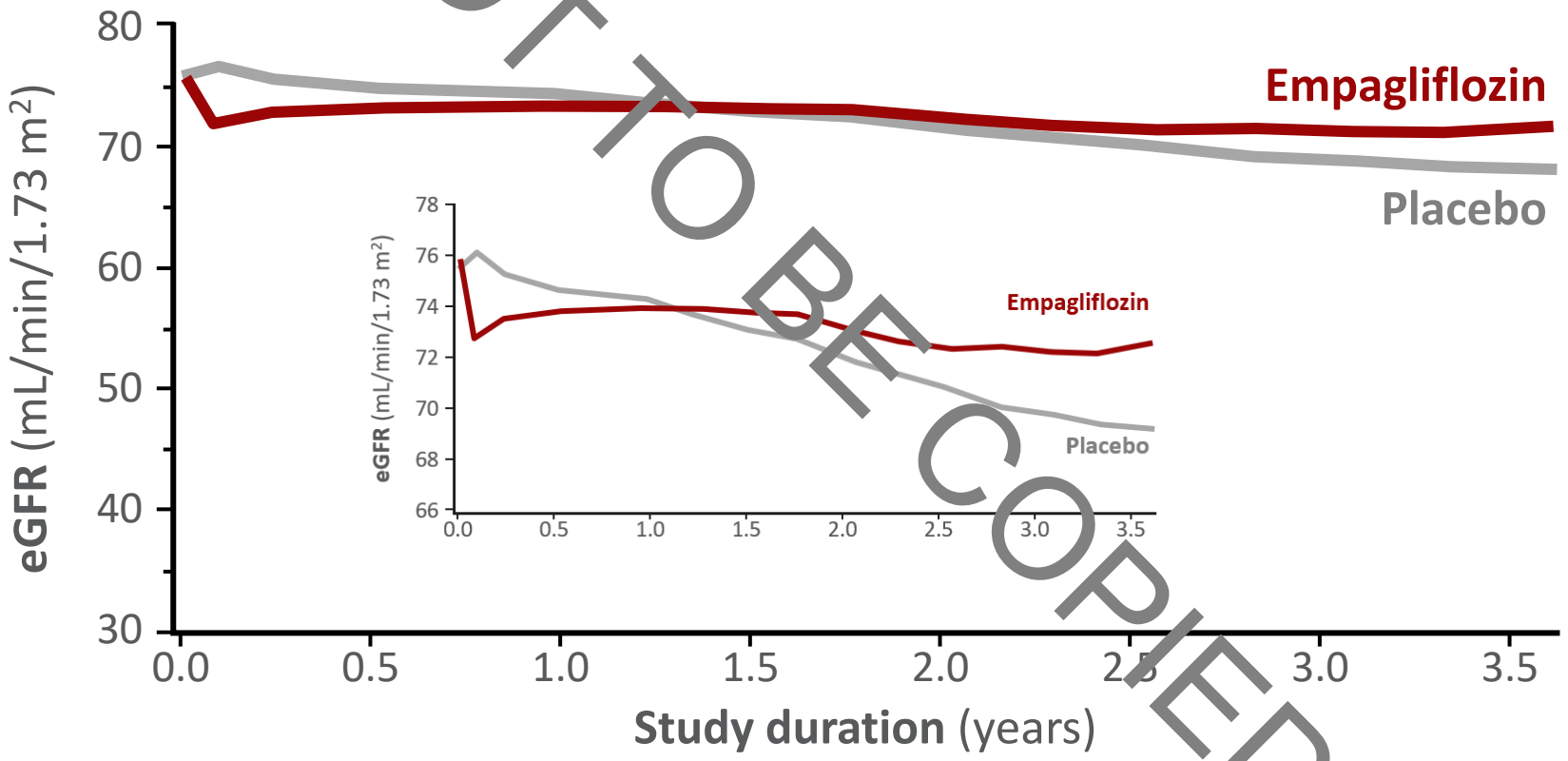
Absolute Risk Reduction [ARR]=4%
Event rate/100 patient years:
11.6 vs 15.6; p=0.00001

DAPA = dapagliflozin; HF = heart failure; hHF = hospitalisation for heart failure; HR = hazard ratio; NNT = number needed to treat.

1. McMurray JJV et al. *N Engl J Med*. 2019. https://doi.org/10.1056/NEJMoa1911303. Accessed September 19, 2019.

Renal function over time

Empagliflozin slowed deterioration in renal function as measured by eGFR levels, compared with placebo, on top of standard of care



There was a 39% relative reduction (6.1% ARR) in the risk of incident or worsening nephropathy with empagliflozin vs placebo

Empagliflozin is not indicated for the treatment of kidney disease.

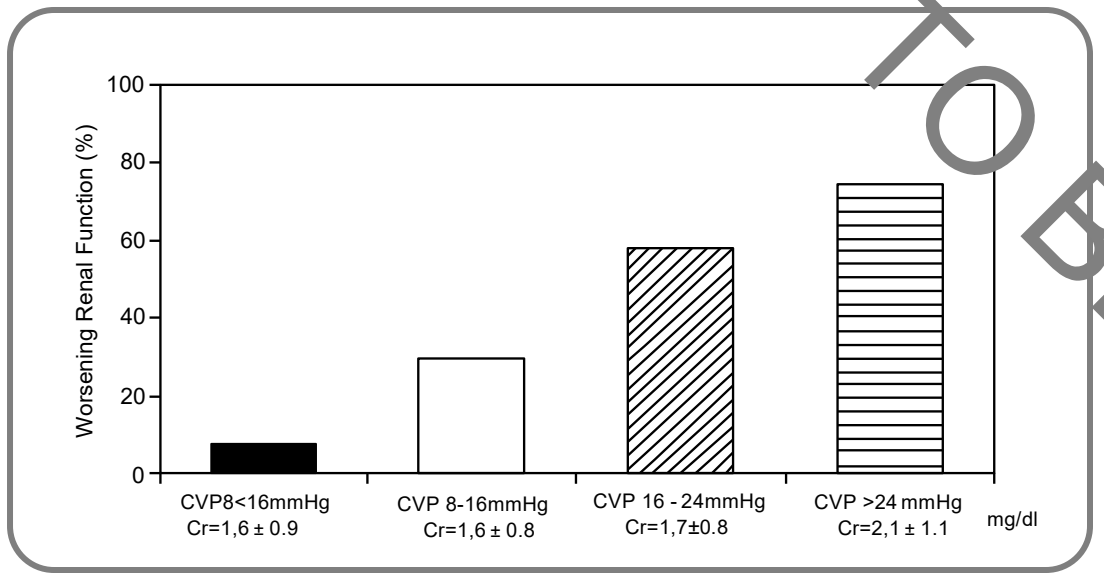
Incident or worsening nephropathy was a pre-specified component of the secondary microvascular outcome.

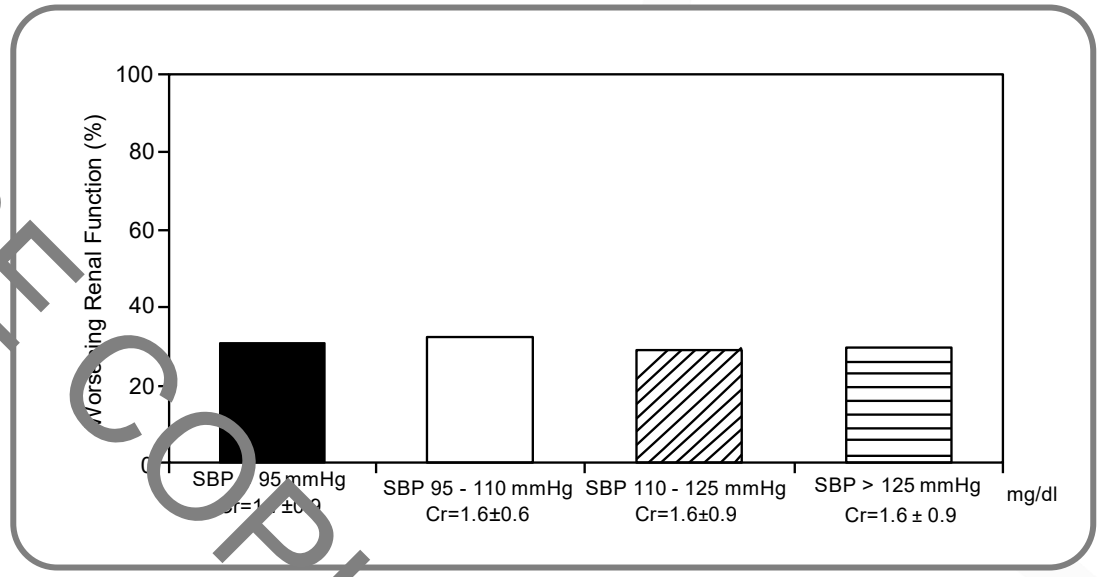
ARR: absolute risk reduction; eGFR: estimated glomerular filtration rate; RRR: relative risk reduction; SE: standard error; SGLT2: sodium–glucose co-transporter 2

Wanner C *et al. N Engl J Med.* 2016;375:323–334.

Worsening Renal Function in decompensated HF is driven by congestion not hypotension

Prevalence of worsening renal function driving hospitalisation according to categories of admission





Study based on 145 patients, WRF was defined as an increase of serum creatinine ≥ 0.3 mg/dl during hospitalization

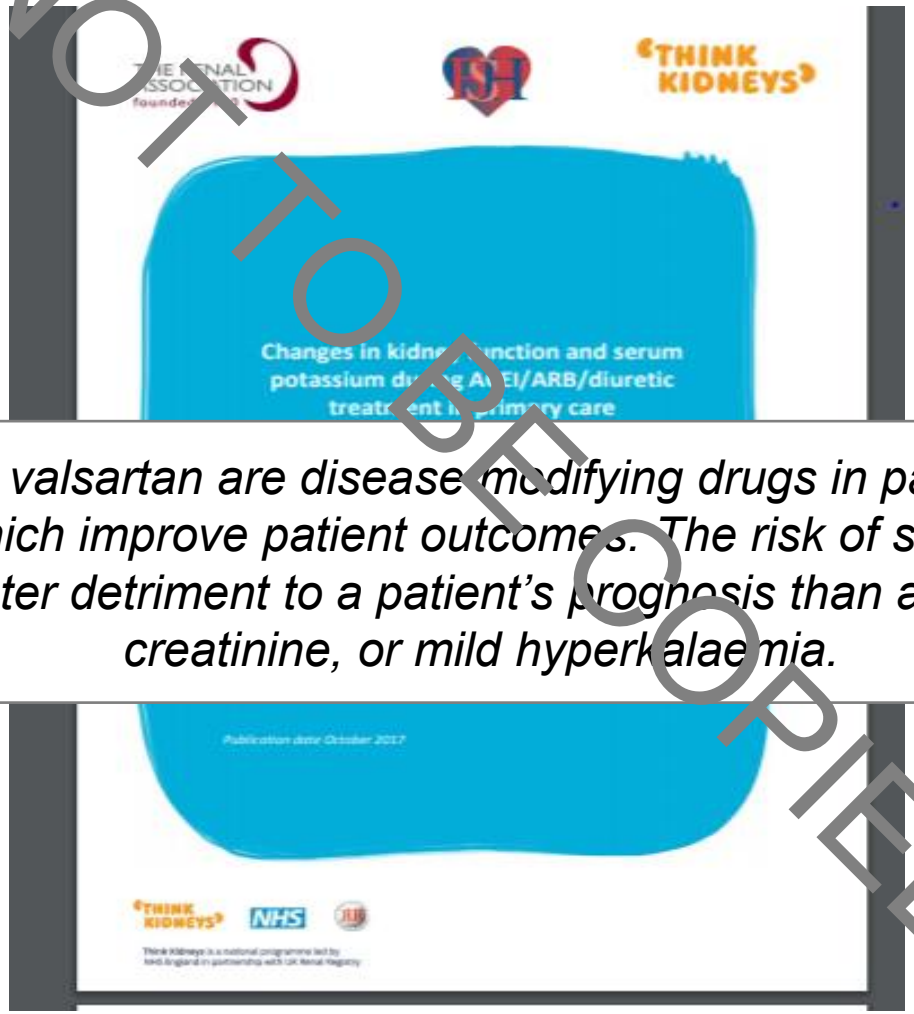
CVP, Central Venous Pressure, Cr , Creatinine clearance, SBP, Systolic blood pressure

Graph adapted from

Mullens W, *JACC* 2009;53:589

ACT ON HEART FAILURE

Joint heart failure-renal position statement

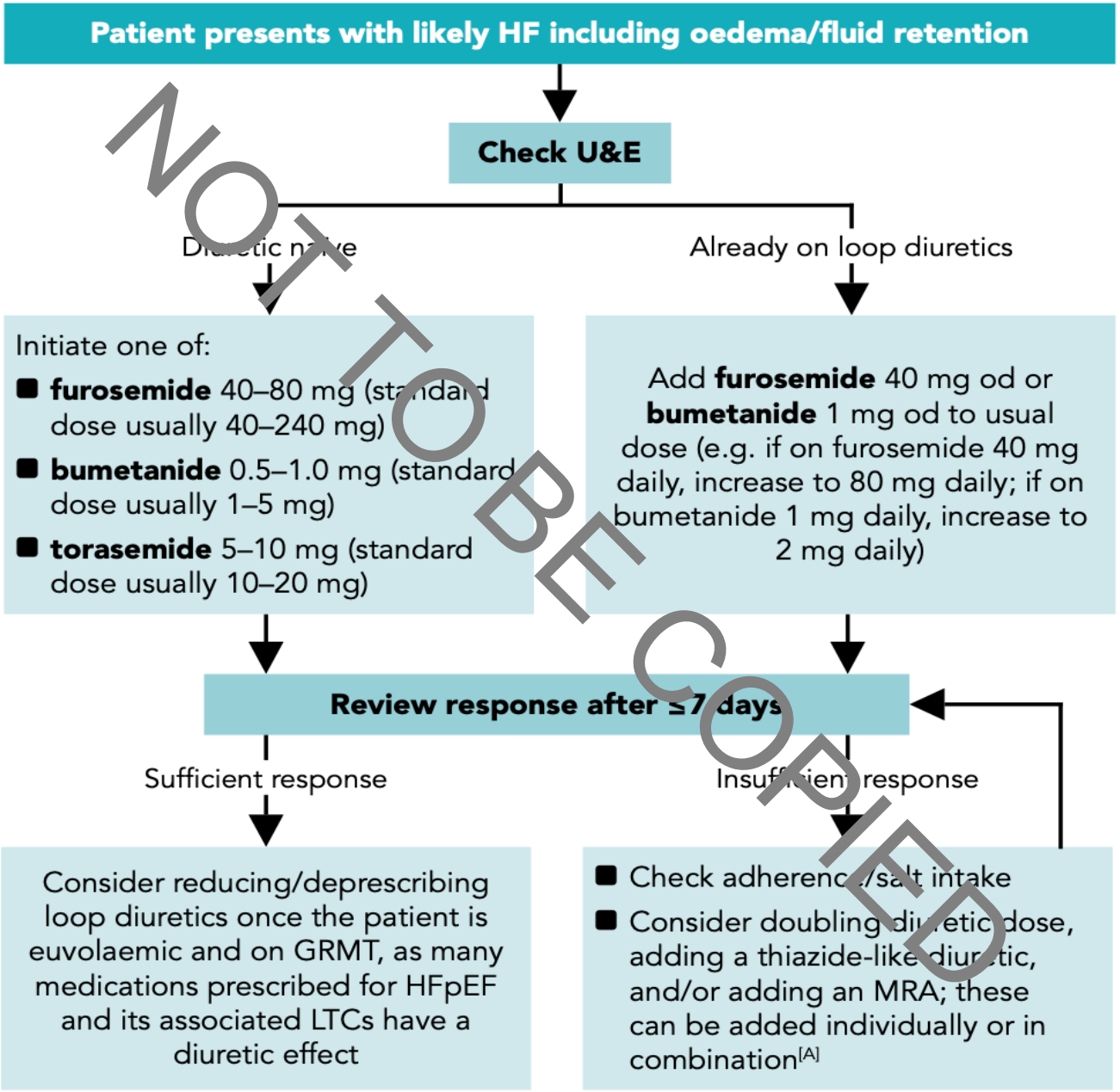


ACEI/ARB/MRA/sacubitril valsartan are disease modifying drugs in patients with heart failure with reduced ejection fraction which improve patient outcomes. The risk of stopping or reducing dose is, in general, likely to be greater detriment to a patient's prognosis than a modest increase in serum creatinine, or mild hyperkalaemia.

Changes in kidney function and serum potassium during ACEI/ARB/diuretic treatment in primary care. A position statement from the Think Kidneys, the Renal Association, and the British Society for Heart Failure. October 2017.

ACT ON HEART FAILURE

Management of Congestion[9,14,22,35]



Complementary and additive [1,2]

SGLT2 may be administered with…	
	Existing HF therapy Any combination of ACEi, ARBs, ARNI, BB, MRA and devices
	Diuretics Note: in patients with volume depletion, recommend correcting prior to initiation of dapagliflozin
	Common CV medications Including antiplatelets and statins
	Common T2D medications Including metformin, DPP4i and GLP1-RA Also including SU and insulin – increased risk of hypoglycemia when dapagliflozin is combined with insulin and SUs; may need to adjust dose of these agents

Consult the Summary of Product Characteristics for full details.

*In patients with severe hepatic impairment, a starting dose of 5 mg is recommended. If well tolerated, the dose may be increased to 10mg.
ACEi, angiotensin-converting-enzyme inhibitor; ARB, angiotensin receptor blocker; ARNI, angiotensin receptor–neprilysin inhibitor; BB, beta blocker; CV, cardiovascular; DPP4i, dipeptidyl peptidase 4 inhibitor; eGFR, estimated glomerular filtration rate; GLP1-RA, glucagon-like peptide 1 receptor agonist; HFrEF, heart failure with reduced ejection fraction; MRA, mineralocorticoid receptor antagonist; SU, sulfonylurea; T2D, type 2 diabetes.
References: 1. Forxiga 10mg film-coated tablets. Summary of Product Characteristics. November 2020. 2. McMurray JJV, et al. N Engl J Med. 2019;381:1995-2008.

SGLT2 inhibitor (Class I)

Dapagliflozin 10mg o.d.

OR

Empagliflozin 10mg o.d.

Diuretics for fluid retention (Class I)

Loop (Furosemide, Bumetanide, Torasemide)

+/- Thiazide (Bendroflumethiazide, Chlorthalidone, Hydrochlorothiazide, Indapamide, Metolazone)

+/- MRA (Spironolactone, Eplerenone)

Screening for, treatment of aetiologies, CV and non-CV comorbidities (Class I)

CV

AF: anticoagulate, rate ± rhythm control
CAD: antiplatelet, lipid-lowering, revascularise
Valvular heart disease
HTN: ACEi/ARB, Calcium Channel Blockers, diuretics
Stroke

Non-CV

DM: SGLT2i; [avoid saxagliptin & TZD]
Obesity: GLP-1RA, exercise, caloric restriction
CKD: SGLT2i, ACEi/ARB, finerenone
Lung disease/sleep disorder: OSA screen/treat
Also: thyroid disorders, frailty / cachexia / sarcopenia, iron deficiency & anaemia, electrolyte disorders, gout & arthritis, erectile dysfunction, depression, cancer, infection

P Campbell. Lancet 2024 doi.org/10.1016/S0140-6736(23)02756-3

Treatment

- Dapagliflozin 10mg OD
- Avoidance of beta-blockers
- Bumetanide 2mg bid
- Increase ACEi
- Spironolactone 25mg od
- Cardiac rehabilitation
- Change linagliptin for GLP1RA

Conclusion

- HFpEF diagnosis often more complicated than LV systolic dysfunction
- Use simple steps outlined to aid stepwise approach to diagnosis
- SGLT2i
- Treat congestion
- Treat co-morbidities
- Call on HF cardiologist for advice if unsure

REMEMBER – RELAXATION IS IMPORTANT – BUT ENERGY DEPENDENT !

ACT ON
HEART FAILURE