

Atrial Fibrillation

Types

Paroxysmal	spontaneous termination within 7 days
Persistent	requires cardioversion to restore sinus rhythm
Permanent	sinus rhythm cannot be restored

Treatment

Freq. control *goal <110/min*

T Bisoprolol 2.5-5 mg

T Digoxin 0.13-0.25 mg *if heart failure*

Rhythm control *if symptomatic*

Paroxysmal T flekainid (Tambacor) 50-100 mg x2

Persistent Electrical cardioversion

AF <48 h → no anticoagulants needed

AF >48 h → anticoagulants > 3 weeks before procedure (alternative: TEE)

Anticoagulants *If CHA₂DS₂-VASc > 2*

1. NOAK, ex. dabigatran (Pradaxa)
2. Warfarin (Waran)
3. Long-term treatment with LMH

NYHA

Mortality % (untreated) after 1 resp. 5 years

NYHA	Symptoms	1 y	5 y
I	Impaired heart function without symptoms	5	20
II	Shortness of breath and fatigue only during strenuous exercise	10	30
III a	Shortness of breath and fatigue during light to medium exercise	25	60
III b	III a, and cannot walk >200m	Same as III a	
IV	Shortness of breath and fatigue at rest. Often confined to bed.	50	80

New York Heart Association (NYHA) Functional Classification

Diagnostics modalities for heart failure (HF)

Heart ultrasound (confirms the diagnosis)

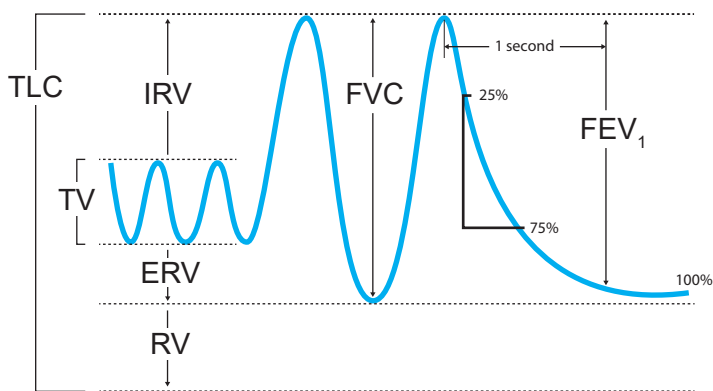
ECG (normal ECG speaks strongly against HF)

Plain film X-ray (heart/lung, to exclude other conditions)

NT-proBNP (if low + ok ECG, rules out HF w. high certainty)

Lab tests (Hb, Na, K, Crea., PK, B-glucose, TSH, CRP, iron)

Spirometry



CHA2DS2VAS

C	Cardiac - Heart failure	1
H	Hypertension	1
A	Age ≥ 75 years	2
D	Diabetes	1
S	Stroke / TIA / Embolism	2
V	Vascular Atherosclerotic disease	1
A	Age 65-74	1
S	Sex - Female*	1

*No indication for antithrombotic treatment if only risk factor

**AF and score ≥2 → Antithrombotic treatment
IF low-medium risk of bleeding (HAS-BLED <3)**

See local guidelines for specific antithrombotic drugs

Example of initial Warfarin treatment, 2.5mgx1 p.o.

Day 1: 2-4 | Day 2: 2-3 | Day 3: 1-4 (dep. on INR)

Heart Failure Treatment

NYHA Treatment when EF <45%

I **ACE inhibitor***
If symptomatic oedema
Diuretic

Beta-blocker (slow increase in dose)

If EF <35%

II **Aldosterone receptor antagonist**

If EF <35% and QRS >120 ms

Assess need for CRT and/or ICD

III + IV Advanced treatment/palliative care.

*If not tolerated → Angiotensin II receptor antagonist, EF = Ejection Fraction

Drug class	Example	Start (mg)	Target (mg)
ACE-Inhibitor	Enalapril	2.5 x 2	10-20 x 2
Diuretic	Furix	20 - 40	40 - 240
Beta-blocker	Bisoprolol	1.25 x 1	10 x 1
Aldosterone antagonist	Spironolakton	25 x 1	25-50 x 1
Angiotensin II antagonist	Candesartan	4-8 x 1	32 x 1

Acute heart failure (left ventricle)

Heart position

Oxygen (target SaO₂ >90%) or **CPAP** if severe lung oedema

Furosemid (10 mg/ml 2-4 ml i.v.)

Nitroglycerin i.v. (0.25-0.5 mg) or

spray (0.4 mg) sublingually if systolic BP >100

HAS-BLED

H Hypertension >160 mmHg **1**

A Abnormal liver or kidney* **1-2**

S Stroke **1**

B Bleeding
Previous tendency or anaemia **1**

L Labile INR
High / Unstable INR or
<60% time in therapeutic range **1**

E Elderly (>65 years) **1**

D Drugs
E.g. ASA, NSAID or
high alcohol consumption **1-2**

* Kidney: Creatinine >200, dialysis, or transplant

Liver: Chronic liver disease, Bilirubin 2x ref, or
ALAT/ASAT/ALP 3x ref.

High risk of bleeding if ≥3 points