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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 symtomatic***
Paroxysmal	T flekainid (Tambocor) 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 CHA_2DS_2-VASc > 2***
	1. NOAK, ex. dabigatran (Pradaxa)
	2. Warfarin (Waran)
	3. Long-term treatment with LMH

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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)

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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)

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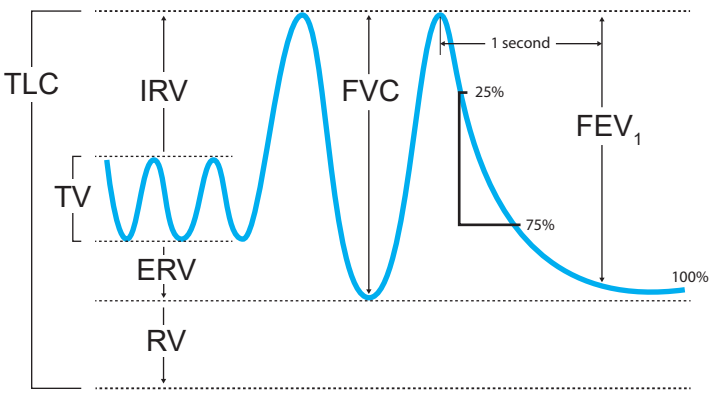
Spirometry



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

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Heart Failure Treatment

NYHA	Treatment when EF <45%
I	**ACE inhibitor*** *If symptomatic oedema* **Diuretic**
II	**Beta-blocker** (slow increase in dose) *If EF <35%* **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*