

# Atrial Fibrillation

## Types

<b>Paroxysmal</b>	spontaneous termination within 7 days
<b>Persistent</b>	requires cardioversion to restore sinus rhythm
<b>Permanent</b>	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 CHA<sub>2</sub>DS<sub>2</sub>-VASc > 2*

1. NOAK, ex. dabigatran (Pradaxa)

2. Warfarin (Waran)

3. Long-term treatment with LMH

# CHA2DS2VAS

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

\*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)

# NYHA

**Mortality % (untreated) after 1 resp. 5 years**

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

New York Heart Association (NYHA) Functional Classification

## Diagnostics modalities for heart failure (HF)

**Heart ultrasound** (confirms the diagnosis)

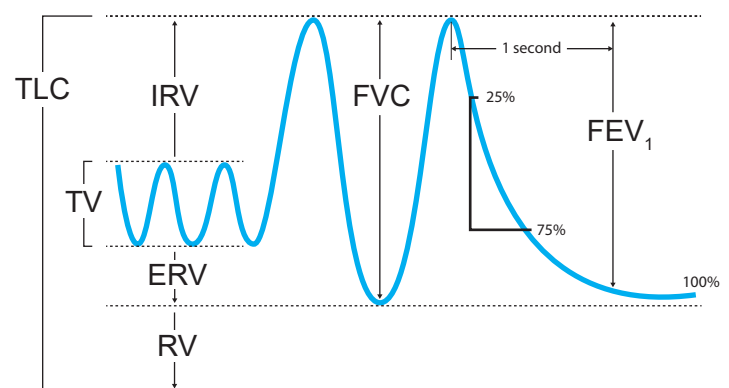
**ECG** (normal ECG speaks strongly against HF)

**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



## HAS-BLED

<b>H</b>	Hypertension >160 mmHg	<b>1</b>
<b>A</b>	Abnormal liver or kidney*	<b>1-2</b>
<b>S</b>	Stroke	<b>1</b>
<b>B</b>	Bleeding Previous tendency or anaemia	<b>1</b>
<b>L</b>	Labile INR High / Unstable INR or <60% time in therapeutic range	<b>1</b>
<b>E</b>	Elderly (>65 years)	<b>1</b>
<b>D</b>	Drugs E.g. ASA, NSAID or high alcohol consumption	<b>1-2</b>

\* 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**

## 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)
<b>ACE-Inhibitor</b>	Enalapril	2.5 x 2	10-20 x 2
<b>Diuretic</b>	Furix	20 - 40	40 - 240
<b>Beta-blocker</b>	Bisoprolol	1.25 x 1	10 x 1
<b>Aldosterone antagonist</b>	Spironolaktone	25 x 1	25-50 x 1
<b>Angiotensin II antagonist</b>	Candesartan	4-8 x 1	32 x 1

### Acute heart failure (left ventricle)

#### Heart position

**Oxygen** (target SaO<sub>2</sub> >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