



Heart Failure Treatments

Mary Ryder MSc, NFESC

ANP in Heart Failure, SVUH, Dublin.

Heart Failure is a clinical syndrome in which patients have the following features:

- Symptoms typical of heart failure
(breathlessness at rest or on exercise, fatigue, tiredness, ankle swelling)

And

- Signs typical of heart failure
(tachycardia, tachypnoea, pulmonary rales, pleural effusion, raised JVP, peripheral oedema, hepatomegaly)

And

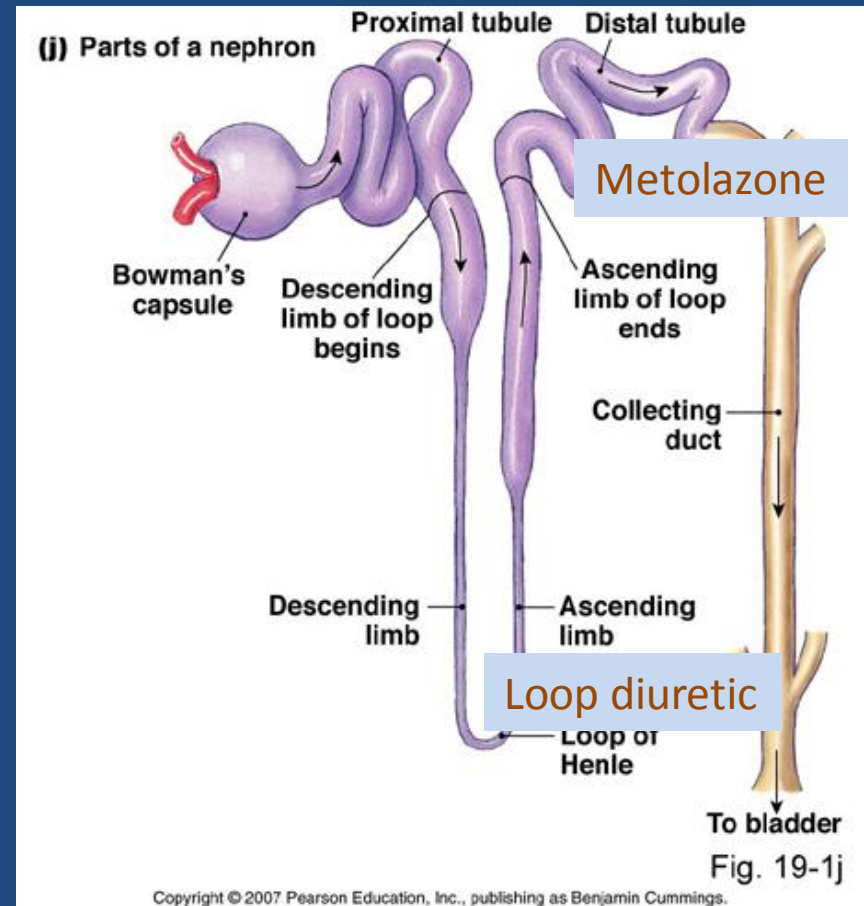
- Objective evidence of a structural or functional abnormality of the heart at rest
(cardiomegaly, third heart sound, cardiac murmurs, abnormality on the echocardiogram, raised natriuretic peptide concentration)

Treatment Options

- Pharmacological
 - ACEI
 - Betablockers
 - Aldosterone Antagonists
 - Nitrates
 - Diuretics
 - Ivabradine
- Non-pharmacological
 - Self-care education
 - Device therapy

Metolazone

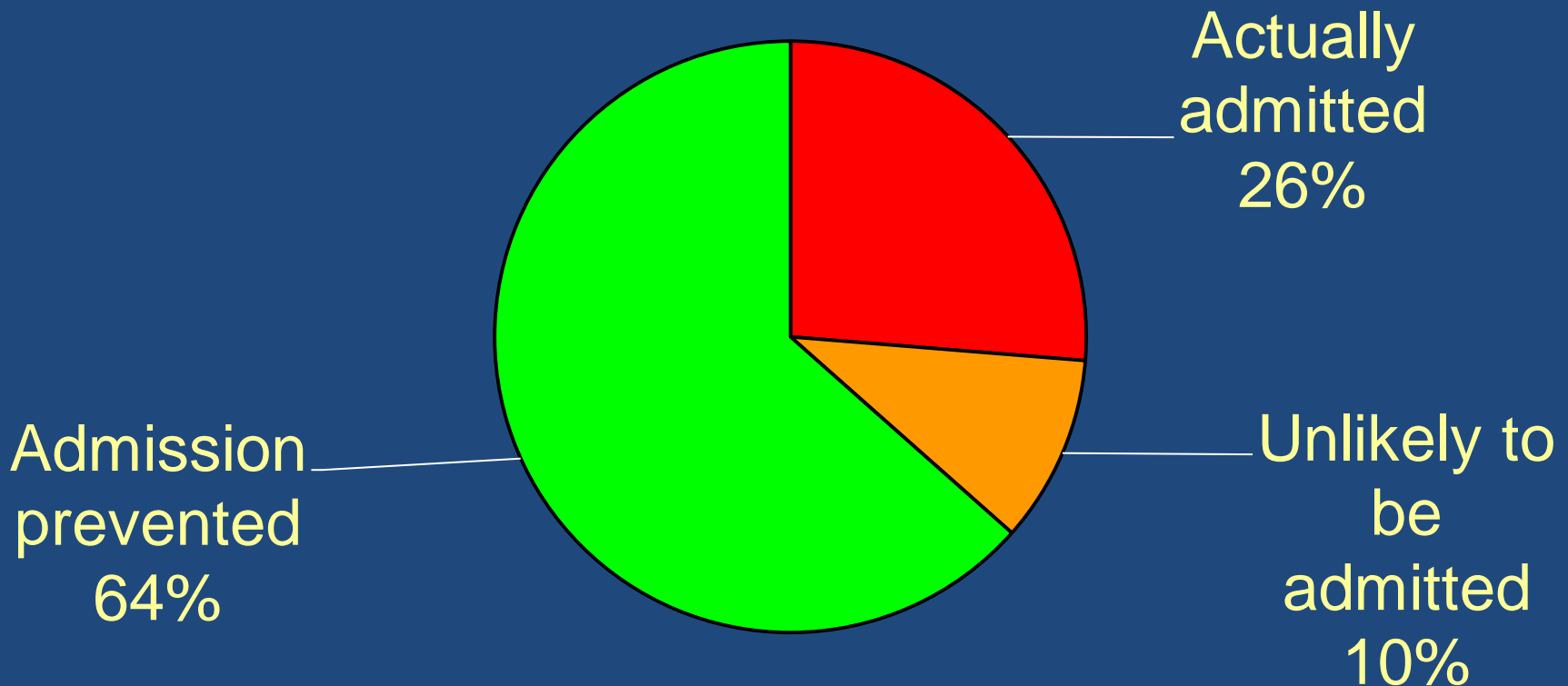
- Quinazole
- Half life 14 hours
- Metolazone indirectly decreases the amount of water reabsorbed into the bloodstream by the kidney, so that blood volume decreases and urine volume increases.
- Targets distal convoluted tubule



Indications for IV diuretic administration

- ✓ Failure of second increment in diuretic to abort deterioration.
- ✓ Given as first approach for symptomatic deterioration in the presence of PND or features of right heart failure.
- ✓ Clinical judgment of clinical instability outside of circumstances outlined above.

Using IV diuretics in Outpatients to treat ADHF



Ivabradine

- Heart rate lowering agent
- Selective and specific inhibition of sino-atrial nodal activity
- Slows heart rate allowing more time for blood to flow into the myocardium



- 18% reduction of HF hospitalisation/death over 3 months

Other use of Medications

- Nitrates
 - Symptom relief for nocturnal dyspnoea
- Aldosterone antagonists
 - NYHA III on maximum tolerated ACE and betablockers
- Opiates
 - Pain relief
 - Dyspnoea

Medications and Co-Morbidities

Ischaemic Heart Disease

- Nitrates
- Statins
- Anti-platelets

Arrhythmias

- Betablockers
- Digoxin
- Amiodarone
- Anti-coagulants

Hypertension

- ACE I
- ARB's
- Betablockers
- Alpha Blockers
- Nitrates

Diabetes

- ACE I
- Insulin
- Statins
- Oral glicazides

Arthritis

- Analgesics
- Glucosamine
- Calcium
- Steroids

Drugs Contraindicated in HF

- NSAIDS
 - Contraindicated with ACE I
 - Acute renal failure
 - Fluid retention
- Calcium Antagonists
 - LVSD
 - Ankle oedema
- Anti-depressants
 - Low Sodiums
- Lyrica

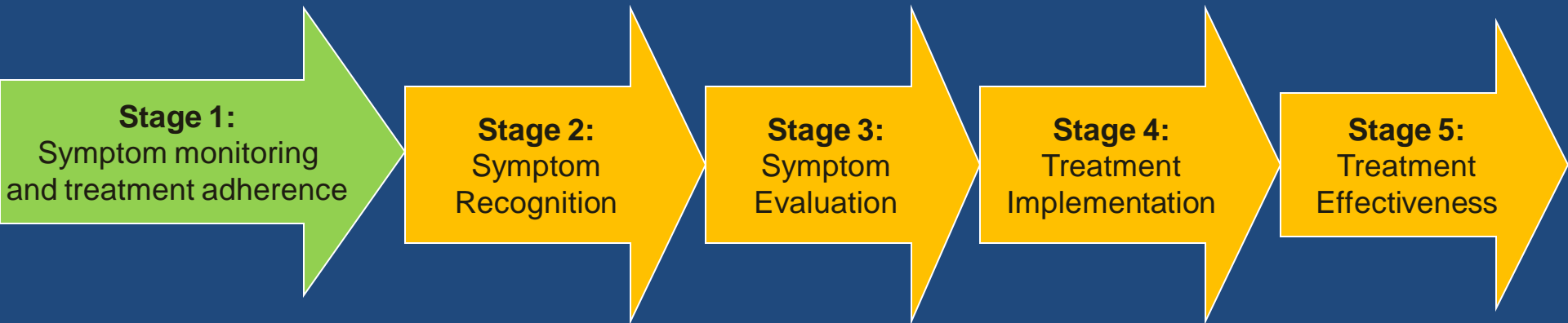


Stages in self-care

Self-care Maintenance



Self-care Management



Self-titration of oral diuretics

“flexible dosage of diuretics based on symptoms and fluid balance should be recommended, within pre-specified limits, after detailed instruction and education”



Exercise

- Physical inactivity contributes to the progression of heart failure
- Exercise training is recommended particularly after episodes of decompensation
- Hospital or home based programmes appear to have same benefits



Dickstein et al 2008

Surgery and Devices

- Revascularisation may improve symptoms and function in patients with aetiology of ischaemic origin
- In patients with severe MR:
 - EF < 30% medication management is first option
 - EF > 30% surgery is recommended

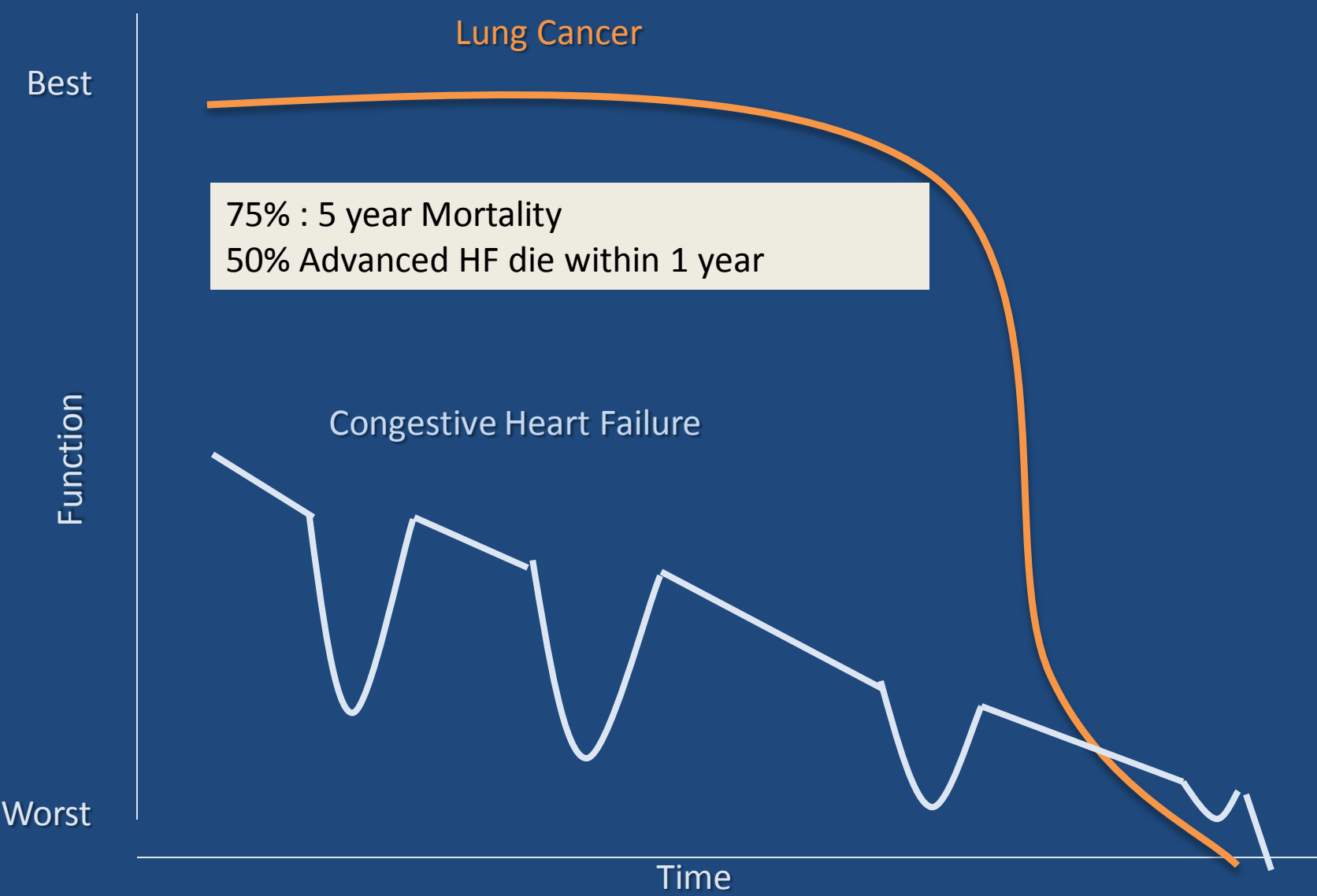
Resynchronisation

- CRT-P:
 - NYHA III-IV despite
 - Optimal medical therapy
 - LVEF $\leq 35\%$
 - QRS $\geq 120\text{ms}$



- ICD
 - Primary prevention
 - LVEF $\leq 35\%$
 - NYHA II-III
 - Survival > 1 year

- Secondary prevention
- LVEF $\leq 40\%$
- Haemodynamically unstable
- VT/syncope



75% : 5 year Mortality
50% Advanced HF die within 1 year

Trajectory of dying from lung cancer or heart failure

Journal Royal Society Medicine 1997;90:128-31

Palliative Care

- Shared care
- Heart failure Specialist palliative care GP
- Home care
- >1 episode of decompensation in 6 months despite optimal therapy
- Need for frequent or continual IV support
- Chronic poor QOL
- Signs of cardiac cachexia
- Clinical judgement: close to end of life

Palliative Care

- Since Sept 2009
- 15 Heart Failure patients referred for Home Heart Failure Management for end-of –life
- GP central communicator
- HF service referred patients to Specialist Palliative Care
- 10 died at home to date

End of Life at Home

- Weekly to fortnightly visits from ANP
 - Multiple diuretic adjustments for dyspnoea management
 - Other cardiac medication reviewed and some discontinued
 - 2 hospitalisations for overload management
- SPC visit weekly
 - Initiate opiate use
- GP link with 2 Specialist Nursing services provide care in homes

Summary

- Medication optimisation
- Education on self-care
- Surgery and device therapy
- Transition to end-of –life care