Bristol Community Heart Failure Service:
30 years ago treatment options for heart failure were very limited.
Today we have lots of options according to disease severity and origin.
Intervention Technology

CAGB and transplantation

PCI vs CABG

Lead in right atrium

Lead within coronary sinus vein

Implanted CRT-P
Common causes of heart failure

**Structural defects:**
- Cardiomyopathy
- Valvular heart disease
- Congenital heart defects

**Demand extra work of the heart:**
- Hypertension
- Pregnancy
- Chronic lung disease

**Damage to the heart**
- Myocardial infarction
- Alcoholic Cardiomyopathy
- Drug overdose/
  - recreational drugs/
  - Infiltrative disease e.g. Amyloid

**Disease of the heart muscle**
- Cardiomyopathy
Diagnosis of heart failure

One of the major challenges in managing heart failure is accurate diagnosis.

Early symptoms can be non specific, other symptoms manifest when the condition is more serious.
Heart Failure Symptoms

- Fatigue and Lethargy
- Pulmonary oedema
- Reduced exercise tolerance
- Tachycardia
- Cough – worse at night
- Depression
- Lower extremity oedema
- Anorexia
- Right upper quadrant pain
- Ascites
- Sleep disorders

Heart Failure has dreadful symptoms, it can be physically and psychologically burdensome.

Worse symptoms are associated with poor prognosis and poor quality of life.
Early and accurate diagnosis is the key to optimising heart failure management

Breathlessness
- Is this COPD/Asthma/other lung condition?
- With Diabetes, women, and the elderly angina can present as breathless symptoms.
- Has the patient got severe anaemia?
- Is body mass contributing to the problem?

History
- Does the patient have a history of heart disease?
- Have they had a recent viral illness? (very common at any age)
- Alcohol intake?
- Exercise tolerance?

Oedema – lower limbs and abdomen
- What medication is the patient taking?
- Any liver disease?
- How mobile is the patient?
Investigations

**Lungs:**
- Auscultation – Indication of oedema or other pulmonary diseases
- CXR - Demonstrates existing lung disease
  - Enlarged cardiothoracic ratio (note definitive diagnostic tool as not accurate)
- Pulmonary function tests

**Heart:**
- Auscultation – Rhythm, rate, murmurs
- ECG – Rhythm, rate, ischaemic changes

**Bloods:**
- BNP – Brain natriuretic peptide (rules out heart failure not rules in). Not helpful in atrial fibrillation.
- Biochemistry – ruling out liver and kidney problems, electrolyte disturbances, Thyroid function (TSH) - thyroid disturbances
- Haematology – ruling out anaemia

These may rule out or rule in the need to investigate for Heart Failure
Diagnosis and its impact on treatment

Different diagnosis’s will have different evidenced management for the condition

There is strong evidence to manage left ventricular systolic impairment and limited evidence for heart failure with preserved function (diastolic)
Management of heart failure

This should be a dual approach as heart failure is a progressive disease

**Treatment agenda**
- Accurate diagnosis
- Optimisation of Heart drugs
- Fine tuning drugs
- Checking compliance
- Promoting exercise
- Rehabilitation
- Active self monitoring
  including daily weight
- Avoiding hospital

**Support agenda**
- Co-ordination of care (multiagency)
- Excellent communication between carers and clinicians
- Provision of Information to manage condition
- Psychological support (high rates of anxiety, and undiagnosed depression)
- Social support
- Symptom management
- Specialist support

Main goal optimising quality of life
The Heart acts to compensate for its poor function

Reduced cardiac output leads to several responses

Neurohormonal response

Increased Sympathetic drive
- Increase heart rate
- Increased force of contraction
- Vasoconstriction
- Sodium and water retention

Renin Angiotensin Aldosterone system (RAAS)
- Vasoconstriction
- Sodium and water retention

This leads to further strain on a weakened heart muscle making the problem worse (remodelling – further stretching and weakening of the heart muscle)
Pharmacological management

Groups of Cardiac drugs used to manage heart failure

- Ace inhibitors / Angiotensin Receptor blocker/
  Sacubitril - Valsartan
- Diuretics
- Beta blockers
- Aldosterone receptor antagonists
- Cardiac Glycosides

This can be broken down into drug actions

- Helping the heart pump
- Optimising heart rate control
- Relief of fluid overload
- Blocking hormonal response to heart failure
When patients fail to progress or meet certain criteria, further intervention may be considered including:

ICD – used with a history of ventricular fibrillation and ventricular tachycardia.

Cardiac resynchronisation pacing – paces both ventricles simultaneously, improving cardiac output and symptoms.

NB: These interventions need to be factored into end of life planning.
Understanding the impact of comorbidities

Heart failure can be difficult to manage especially with other health problems.
Manging heart failure with comorbidities

- Renal impairment
- Asthma
- COPD
- Chronic anaemia
- Low Blood Pressure
- Frailty and risk of falls
- Dementia / memory problems
- Diabetes
- Obesity
- Depression
- Anxiety
- COPD
- to live life well
Mary – aged 82

Diastolic Heart Failure

Anaemia – Ferritin 59
HB 105- Prescribed PPI and iron replacement but not taking as feels this makes her sleep.

Good renal function

Poor memory

Breathless NYHA Class II/III

Blood pressure 160/90
ECG- sinus bradycardia rate 59bpm
Oxygen saturations 94%

Heart Failure Medication – Furosemide

Main stay treatment for Diastolic heart failure titration of diuretics and excluding other causes of dyspnoea
Robert

Aged 85 years old
Severe Left ventricular systolic impairment.
Atrial fibrillation rate 66bpm
CVA
Incontinent of urine
Frail walks with a stick and wife’s help
Wife well and main carer

Under my care 1 year ago following an admission to hospital. Medication was optimised (full dose ACEi, rate controlled on beta blocker, Spironolactone and low dose loop).
Referred back due to deteriorating renal function, Spironolactone stopped and symptoms deteriorated (current eGFR 28-31, creatinine 171-190)

Sacubitril / Valsartan 24/26mg bd. replaced ACEi
Josphef

Polish gentleman
Poor English (reviewed with translator)
Aged 48

Severe left ventricular systolic dysfunction EF 15%.
Alcohol related.
Fast atrial fibrillation
Uptitration of medication limited by non-attendance, no compliance and frequent hospital admissions

I admitted this gentleman twice as he was in fast atrial fibrillation – had a cardioversion and second admission Ablation.

First start stopping alcohol consumption!
Joanne

Aged 65
Good blood pressure and renal function.

Known asthmatic along with severe
anxiety and mental health problems has
undergone CBT and is under the care of a
mental health nurse

Very tachycardia needing low dose beta
blocker and full dose Ivabradine
full ACEI, Low dose diuretic an
Spironolactone.

On going cough unsure if related to beta blocker

Non pharmacological
management stressed the how
to work out Asthma Dyspnoea V
Heart failure dyspnoea
Giving patients the skills to self monitor

Non pharmacological advise
Non Pharmacological management of heart failure
Titration of diuretics according to weight

Patient is taught to self manage and take action when:

Weight gain of 4-5 lbs and
More Breathless?
More leg swelling?
Bloated?
Orthopnoea / paroxysmal nocturnal dyspnoea?

Plan:
- Take an extra Furosemide / Bumetanide daily for 3 days.
- Cut back fluid intake to 1.5lites.
If no improvement advised to see GP.
Explore causes e.g. ? Infection ? Rhythm changes
Promoting physical fitness

Exercise is encouraged

**Caution:** Severe Aortic stenosis no severe exertion – risk of collapse

- Consider exercise on prescription
- Encourage daily activity
- Must be able to walk and talk
- Balance activity and rest
- Promotes muscle strength, and cardiac benefits
- Stronger muscles use oxygen more efficiently hence reduce oxygen demand and cardiac workload.
- Mental health benefits

Avoidance of exercise using valsalva manoeuvre

Longer warm up an cool down needed

Primary cause of HF is IHD – exercise will promote greater HDL/ control BP

Helping you to live life well
Advice if you are on medication to help your heart

If you are unwell with prolonged or significant diarrhoea or vomiting (over 12-24hrs) or you are unwell and can’t drink fluids, you may need to stop your heart tablets for the period of your illness.

Here is a list of tablets you should stop if you become unwell:

ACE inhibitors; Ramipril, Lisinopril, Captopril, Perindopril, Trandolapril, Enalapril or Quinapril
Angiotensin II Receptor Blockers; Losartan, Candesartan, Irbesartan, Telmisartan or Valsartan
Aldosterone Antagonists; Spironolactone and Eplerenone
Loop Diuretics; Furosemide or Bumetanide
Thiazide Diuretics; Metolazone, Bendroflumethiazide or Indapamide

It is important to seek prompt medical advice in these circumstances, especially if you are becoming dehydrated.