Heart Failure Nursing
Diagnosis to Death

Saudi Heart Association 2011

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Heart Failure

- Acute Heart Failure
  - Post MI
  - Atrial Fibrillation
- Chronic Heart Failure
  - Left Ventricular Systolic Dysfunction
  - Preserved Systolic Function
- Advanced Heart Failure
  - More than 1 admission with ADHF (Guidelines)
- End Stage Heart Failure
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)

Dickstein et al 2008
Heart Failure Readmissions in a Disease Management Program

Phelan et al, SVUH in-house data
Components of Heart Failure management

• Pharmacological
  – ACEi or ARB
  – Beta blocker
  – Aldosterone Antagonists
  – Nitrates
  – Ivabradine
  – Diuretics

• Non-Pharmacological
  – Device therapy
  – Education
  – Exercise
  – Diet
  – Psychological management

Dickstein et al 2008
Individualised Care Structure

- **Aetiology & Co-morbidities**
- **Medications, symptoms, beliefs, knowledge**
- **Diagnosis Systolic/HFPEF**
- **Risk assessment**
  - **High or low risk, redefined at each visit**
  - **External Influences**
    - Social circumstances, lifestyle factors, beliefs, support, community
    - Evidence based medications or treat underlying aetiology
Risk Assessment

• High Risk patients:
  – Admission with Acute Decompensated Heart Failure (ADHF)
  – High risk of readmission
    • BNP does not decrease by 50% from admission to discharge
  – Known HF patient with ADHF readmission

• Low Risk patients
  – Referred to service
    • NDC/referred
    • Group Education
Specialist Diagnostic Clinic

- 2003-2007: 327 patients referred to Diagnostic clinic with provisional diagnosis of HF

  Heart Failure Diagnosis

- Patients were older
- More likely to be on ACE/diuretic/beta blocker
- Immediate optimisation of medication
- Initiation of self-care principles

Mak et al 2008
Patient Types

Still have high risk group
  - Numbers gradually deteriorating

New low-risk population increasing
  Little research
Self-Care in Heart Failure

Actions aimed at maintaining physical stability, avoidance of behaviour that can worsen the condition and detection of the early symptoms of deterioration

ESC guidelines 2008

• Maintenance
• Management

Reigel et al 2004
Education: Do all patients need the same?

- Individual time for high risk groups
- Group sessions for refreshment and low risk groups
- Saving 116 hours of nurse time delivering group education
- Repeat education at identified intervals

*Ryder et al Submitted EJCVN 2010*
Impact of Nurse at ARC

- 104 patients
- 90% required refreshment of education
- The majority recorded weights and ankle swelling weekly
- Breathing, energy levels and appetite were measured infrequently.
- Weight and appetite were perceived more important symptoms to monitor.

What symptoms would they report?

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Breathing</td>
<td>85%</td>
</tr>
<tr>
<td>Ankle Swelling</td>
<td>56%</td>
</tr>
<tr>
<td>PND</td>
<td>41%</td>
</tr>
<tr>
<td>Palpitations</td>
<td>28%</td>
</tr>
<tr>
<td>Weight Gain</td>
<td>26%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>23%</td>
</tr>
<tr>
<td>Reduced Appetite</td>
<td>18%</td>
</tr>
<tr>
<td>Orthoponoea</td>
<td>15%</td>
</tr>
<tr>
<td>Other</td>
<td>5%</td>
</tr>
</tbody>
</table>

Ryder SVUH 2008
Resynchronisation

• CRT-P:
  – NYHA III-IV despite
  – Optimal medical therapy
  – LVEF ≤ 35%
  – QRS ≥120ms

• ICD
  – Primary prevention
  – LVEF ≤ 35%
  – NYHA II-III
  – Survival > 1 year
  – Secondary prevention
  – LVEF ≤ 40%
  – Haemodynamically unstable
  – VT/syncope

Dickstein et al 2008
Heart Failure Trajectory

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

Referral to HFU

Physical Function

Time

2004 2005 2006 2007
Management

- Increased pharmacology
- Large doses of diuretics
- Increased episodes of ADHF
- Decreased exercise tolerance
- Cardiac Cachexia
- Depression
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.

Ryder et al 2008
Using IV diuretics in Outpatients to treat ADHF

- Actually admitted 26%
- Unlikely to be admitted 10%
- Admission prevented 64%

Ryder et al 2008
IV Diuretics

- 74% effective
- 99 hospitalisations saved
- Applicable to two thirds of ADHF pop
- Net cost benefit of 1,266 Euro / pt

Ryder et al 2008
Characteristics of 3 stages of Progressive Heart Failure

- **Stage 1:** Chronic Disease Management (NYHA I-III)

- **Stage 2:** Supportive and palliative care (NYHA III-IV)
  - Id key professional in community to co-ordinate care with specialist services. Aim maintain optimal symptom control and QOL

- **Stage 3:** Terminal Care
  - Care according to patients and carers needs

*Jaarsma et al 2009*
There comes a time when actively pursuing aggressive curative may do more harm than good...The challenge is how to facilitate a sensitive transition from curative to palliative care.

Scholfield et al 2006
Summary

• Constantly changing risk stratification
• Monitor progression of disease
• Constant re-education
• Constant changes in care delivery
• Communicate with the patient they are key component of heart failure team