Jonathan Howlett

When is it LV Recovery: Case Presentations
Disclosures

Jonathan Howlett

• Relationships with commercial interests:
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• I do plan to discuss off label use of medications!!
  – Well, not really, but sometimes I do anyway so I say so to stay safe!
Timing of Visits and Whether to Stop Medications

Jonathan Howlett
36 Year Old Female

• Diagnosed with pre-eclampsia at 24 weeks
• Progressive edema
• Dyspnea noted, thought to be ‘normal’ and told to ‘suck it up’
• Went into labour at 34 weeks
  – Pulmonary edema day 2 post natal
  – Nearly intubated
Mrs. Doe

- ECHO: LV 57 mm (EDD), EF 18%, moderate MR
- She was treated with vasodilators and diuretics
- Improved
- ACE and BB started
  - Tolerated, titrated
- Clinical improvement
Longitudinal Changes in Ejection Fraction in Heart Failure Patients With Preserved and Reduced Ejection Fraction

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Mrs Doe Follow Up

- Now asymptomatic
- Diuretic stopped due to hypovolemia
- Repeat ECHO EF 54%
  - LV EDD 48 mm
  - No MR
  - Normal RVSP est but only trivial TR
Now she wants to stop her HF meds

- Yes or no?
- If so, which ones?
Maternal Complications Associated With Subsequent Pregnancy*

- HF Symptoms: 44% in B vs 21% in A
- >20% Decreased LVEF: 25% in B vs 21% in A
- >20% Decreased LVEF at F/U: 14% in B vs 0% in A
- Maternal Mortality: 19% in B vs 0% in A

*including aborted pregnancies
Contractile Reserve in Patients With Peripartum Cardiomyopathy and Recovered Left Ventricular Function

Lampert et al. AM J Ob Gyn 1997; 176:189
Case

- 54 yo male admitted myocarditis 1 year ago (normal coronaries), followed in HF clinic
- EF originally 20% with LVEDV 320 ml
  - More recently 50% on ECHO with normal LVIDD 55 mm
- Has done very well since you have seen him
Case

- Perindopril 8 mg OD
- Digoxin 0.125 mg OD- stopped 3 months ago
- Carvedilol 25 mg BID
- Spironolactone 25 mg OD
- Lasix 40 mg OD- patient has not been taking it
Case

- BP 120/70, HR 60 reg
- JVP ASA, - AJR
- HS: S1, S2, no murmurs, no rub
- No edema bilaterally
- No palpable organomegaly
- Chest: clear
Would you stop his medications?

- Yes
- No
- It depends........
• He actually had stopped medications a months ago

• 2 Months later, presented with mild breathlessness
  – Repeat EF 28% with LVID 63 mm, moderate MR
What is the evidence for drug withdrawal in HF?

- Almost nil for ACE
- Few studies of BB
  - Several case series of up to 60 patients
  - No controls
  - No ‘denominator’
- Largest Trial Waagstein 24pts withdrawal
  - 66% deteriorated, 4 died
- Morimoto- Japan- 13 patients
  - 7 deteriorated, 4 died
- Swedberg, initial paper in 15 DCM
  - 40% worsened
- When deterioration occurred, it did so within a few months
Can Medications be Safely Withdrown in Patients With Stable Chronic Heart Failure? Systematic Review and Meta-analysis

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Fig. 1. Study flow diagram.
Withdrawal of agents

- ACE inhibitors
  - Clinical worsening in 70%
  - Minor change in EF
  - Exception seems to be in renal dysfunction

- Beta Blockers
  - In both NICM and ICM
  - Odds ratio of return of HF 26 in one study if BB stopped
  - About 70% chance of lower EF, often with symptoms

- MRA:
  - No real data

- Diuretics
  - Increased likelihood of return of symptoms

- PPCM
  - Low incidence of HF if EF returned to normal
<table>
<thead>
<tr>
<th>Clinical Presentation</th>
<th>Conditions to justify withdrawal of TT after 6-12 months of therapy</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Tachycardia related cardiomyopathy        | 1) Normal EF  
2) NYHA FC I  
3) Underlying tachycardia controlled                                                                                      | Usually due to atrial fibrillation/flutter with increase HR, may rarely occur due to PVCs. May need BB for rate control                     |
| Alcoholic Cardiomyopathy                  | 1) Normal EF  
2) NYHA FC I  
3) Abstinence ETOH                                                                                                              | Nutritional deficiency may coexist.                                                                                                                                                              |
| Chemotherapy related CM                   | 1) Normal EF  
2) NYHA FC I  
3) No further drug exposure                                                                                                       | May need control of obesity and obstructive sleep apnea                                                                                                                                          |
| Peri-partum Cardiomyopathy                | 1) Normal EF  
2) NYHA FC I                                                                                                              | Certain types of chemo (trastuzumab- high rate of improvement one it is stopped) are more likely to reverse than others (anthracyclines for which therapy should be continued). |
| Valve replacement surgery                 | 1) Normalization of EF  
2) NYHA FC I  
3) Normally functioning valve                                                                                                    | Long-term surveillance strongly recommended.                                                                                                                                                    |
|                                           |                                                                                                                                                                                      | Repeat pregnancy may be possible for some (REF 2009); (silversides). Consultation at high-risk maternal centre should be undertaken.     |
|                                           |                                                                                                                                                                                      | Less consensus on regurgitant lesions with ongoing dilation of LV                                                                       |
Could we have predicted the outcome here?
Mrs. PP

- 60 year old female presented 1 year ago with breast cancer, HER +
- Underwent FAC and Trastuzamab therapy for 6 months
- 9 month EF showed EF 60 to 44%
- Trastuzamab stopped
- Progressive heart failure 3 months later
- Placed on Ace and BB and diuretic and Trastuzamab stopped
Questions (Y or N)

- Would you stop trastuzumab for good?
- When would you re-check LVEF?
Further Follow-up

- 3 months later LVEF is 55% on therapy
- Do you stop therapy?
  - Why or why not?
- How long would you follow if EF stayed normal?
Chemotherapy-Induced Cardiomyopathy

- Most common and severe with anthracyclines and herceptin

**Recommendations**
- Patients receiving known cardiotoxic agents for cancer should be carefully monitored during and after therapy. If LV function deteriorates, they should be aggressively treated with beta-blockers and other standard therapies for HF
  (Class IIa, Level B)
- In patients with a history of chemotherapy-induced cardiomyopathy or HF, other cancer treatment options should be considered
  (Class IIa, Level B)

Questions?

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Hemorrhage risk in HF treatment

Figure 4. Cumulative percent reduction in odds of death at 24 months associated with sequential treatments compared with no treatment. Analysis includes only patients eligible for all 4 therapies (N=368). ACEI indicates angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; CRT, cardiac resynchronization therapy; ICD, implantable cardioverter-defibrillator.

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