Live with the Experts: Team Challenges in Prediction, Prevention, and Treatment

Bonnie Ky, MD, MSCE and Ana Barac, MD, PhD

Panelists: Drs. Domenico, Durand, Fadol, Lenihan, Nohria and Smith
Case 1

- 90 year old male with metastatic renal cell cancer (Stage IV pT3NxM1) s/p right radical nephrectomy (creatinine 1.7) with elevated BPs on pazopanib

- He has a longstanding history of hypertension on losartan 50mg daily.

- His BP prior to pazopanib was ~140/80. After pazopanib, his BP increases to ~150-170/90s
Discussion

• What is his optimal BP target?

• What medications would you start?

• How would you instruct him to monitor his BP?

• What would you recommend if his BP is consistently 110s in the morning but 130s in the evening?
Case 1

• Harsh systolic murmur on exam

• Echocardiogram → LVEF of 40 to 45%, moderate LVH, aortic stenosis with an AVA 0.8cm²
  – Peak gradient 43mmHg, mean gradient 18mmHg
  – AV VTI 69, LVOT VTI 17.5, DVI 0.25

• Labs → TC 237, HDL 55, TG 141, LDL 151

• Reports a decrease in exercise capacity
Discussion

• How would you manage his aortic valve disease? Additional diagnostic testing?

• Would you treat his dyslipidemia? How?

• Does the presence of AS influence your BP target?
Case 2 – Dr. Kathleen Zhang
Case 3

- 34 year old female with left sided breast cancer

- Neoadjuvant therapy with paclitaxel, trastuzumab and pertuzumab x 12 cycles $\rightarrow$ doxorubicin (240 mg/m$^2$) and cyclophosphamide $\rightarrow$ mastectomy

- Left sided XRT with photons using deep breath hold

- To start trastuzumab/pertuzumab, but notes over the past few weeks she can’t keep up with Zumba
Case 3 – Cardiac Function

Baseline
LVEF 55%
GLS -18.3%

Post THP
LVEF 55%
GLS -19.9%

Post Doxorubicin
LVEF 50%
GLS -19.8%
Discussion

• What is the natural history of anthracyclines + trastuzumab cardiotoxicity? Trastuzumab without anthracyclines? Predictors of cardiac recovery?

• Who and when should patients be referred to cardiologists?

• Would you start CV medications? Would you hold cancer therapy at this point? What is the oncologic impact?

• How should she be monitored?
Case 3 – Cardiac Function

During Trastuzumab and Pertuzumab
LVEF 40 to 45%
GLS -14.4%
Discussion

• What would you recommend now?

• What is the role for aldosterone antagonists? Entresto?

• If she recovers her LVEF, would you ever stop medications?
Case 4 – Dr. Oscar Calvillo Arguelles
Case 5

- 70 year old male with atrial fibrillation, diabetes, HFpEF, CAD s/p a 3-vessel CABG in 2013, renal insufficiency (Cr ~1.8-2.2), COPD, bladder cancer status post local resection

- Presents in CML t(9;22) blast crisis w/bilineage (T-lymphoblastic, myelomonocytic) components
Case 5 – Clinical Course

- Pre-treatment echocardiogram → normal LV and RV function, normal pulmonary pressures (31mmHg), no significant valvular disease

- 2+ edema noted, but diuretics held for concern for tumor lysis syndrome

- Treated with dasatinib and develops pleural effusions, lower extremity edema, ascites, and hypoxia. Hospital course notable for refractory volume overload and hypoxic PEA arrest
Case 5 – Echocardiogram on Dasatinib
Case 5 – Hemodynamics on Nilotinib

- Dasatinib stopped. Aggressively diuresed; volume status optimized. Started on nilotinib. Within 1 month, admitted with dyspnea, volume overload
- Right Heart Catheterization:
  - RA 21 mmHg with ventricularized waveform
  - RV 70/20 mmHg
  - PA 81/28 mmHg; PA sat 61.4%, Hgb 7.4; PVR 2.5 WU
  - PCWP 23 mmHg
  - CO/CI 9 l/min and 3.8 l/min/m²
  - SVR 6.8 WU
Case 5 – Echocardiogram on Nilotinib
Case 5 – Clinical Status on Nilotinib

- Volume status again optimized
- Discharged on torsemide 60mg twice daily and aldactone 25mg daily with a BUN/Cr 101/1.8 and NT-proBNP 4,538
- Presents 10 days later with increasing abdominal girth, cough and dyspnea
Discussion

• What are the CV toxicities of bcr-abl tyrosine kinase inhibitors? What is the natural history?

• What is the risk of dasatinib and nilotinib and pulmonary hypertension? Pleural and pericardial effusions and ascites?

• What are the optimal CV management strategies? What are the optimal oncologic management strategies?
Case 6 – Dr. Allison Padegimas
Case 7

• 55 year old female with chronic dyspnea and newly diagnosed right sided, Stage IIIA (T3N2M0) breast cancer that measures 6.1cm

• Oncologist recommends neoadjuvant chemotherapy with dose dense doxorubicin (240mg/m²) with cyclophosphamide and paclitaxel
Case 7

• History of heart failure in 2015, at which time she was admitted and diagnosed with a bicuspid valve and moderate aortic regurgitation

• More recently, she has noted worse dyspnea on exertion. Her echocardiogram reveals:
Case 7 - Echocardiogram

LVIDd 6.3cm  LVIDs 4.6cm  (BSA 1.8m²)  
AR PHT = 205 ms
Case 7 - Echocardiogram
• Cardiac catheterization:
  – Ao 164/60
  – LVEDP 20mmHg; wedge 27mmHg
  – RA 10mmHg
  – RV 46/13 mmHg
  – PA 46/24 mmHg
  – CI 2.5 L/min/m²
  – Normal coronary arteries

• Had been advised to have AV surgery but large breast mass detected

• At time of visit, no volume overload, but Class II HF
Discussion

• What is her CV risk with anthracyclines?

• Should she proceed with cardiac surgery or chemotherapy first?

• What can be done to mitigate her CV risk?
Case 8 – Dr. Michael Fradley