Date of Admission: 2025-04-09 - 2025-04-14

Discharge Diagnosis: Osimertinib-Induced Cardiomyopathy with Reduced Ejection Fraction in Patient with EGFR-Mutated NSCLC

1. Detailed Oncological Diagnosis:

Primary Diagnosis: Non-Small Cell Lung Cancer (NSCLC), Adenocarcinoma, Stage IVA
Date of Initial Diagnosis: May 10, 2021

Histology:

- Pleural fluid cytology and pleural biopsy revealed adenocarcinoma consistent with lung primary
- Molecular testing: EGFR Exon 19 deletion positive
- PD-L1 expression: <1% Tumor Proportion Score (TPS), CPS 2, IC <1%

Staging:

- TNM (8th edition): cT2bN2M1a (Stage IVA)
- Initial imaging showed 3.6 cm left upper lobe mass with ipsilateral pleural effusion and malignant pleural nodularity

2. Oncological Treatment History:

Targeted Therapy:

- Osimertinib 80 mg PO daily
- Initiated June 1, 2021
- Ongoing excellent response with minimal residual disease

Procedures:

- Therapeutic thoracentesis (May 2021)
- PleurX catheter placement (June 2021)
- Chemical pleurodesis (September 2021)
- PleurX catheter removal (October 2021)

3. Hospital Course:

Patient presented with progressive dyspnea, fatigue, and lower extremity edema over 2 weeks. Physical examination revealed tachycardia, bilateral crackles, and 2+ pitting edema. Chest X-ray showed mild pulmonary edema and stable oncologic disease. BNP was markedly elevated at 2,450 pg/mL.

Echocardiogram demonstrated new reduced left ventricular ejection fraction of 35% (baseline 65% in March 2021), global hypokinesis, and grade II diastolic dysfunction. Coronary angiography showed no significant obstructive disease. Cardiac MRI was consistent with non-ischemic cardiomyopathy. Cardiology consultant diagnosed

osimertinib-induced cardiotoxicity based on temporal relationship, exclusion of other etiologies, and known association of EGFR TKIs with cardiac dysfunction.

Osimertinib was temporarily held. Patient was initiated on guideline-directed medical therapy for heart failure including carvedilol, lisinopril, and spironolactone with significant symptomatic improvement. After multidisciplinary discussion, osimertinib was resumed at reduced dose (40 mg daily) with close monitoring.

Pulmonary evaluation confirmed stable oncologic disease with no evidence of pneumonitis or recurrent pleural effusion. Diuresis resulted in 3.2 kg weight loss with resolution of edema and improved exercise tolerance.

4. Discharge Medications:

Cancer Therapy:

- Osimertinib 40 mg PO daily (reduced from 80 mg daily)

Heart Failure Management:

- Carvedilol 6.25 mg PO BID (target 25 mg BID as tolerated)
- Lisinopril 2.5 mg PO daily (target 20 mg daily as tolerated)
- Spironolactone 25 mg PO daily
- Furosemide 20 mg PO daily

Chronic Medications:

- Pantoprazole 40 mg PO daily
- Atorvastatin 40 mg PO daily
- Aspirin 81 mg PO daily

5. Follow-up Plan:

Oncology: Dr. M. Freeman in 1 week (April 21, 2025)

Cardiology: Dr. S. Patel in 2 weeks (April 28, 2025)

Pulmonology: Dr. V. Rodriguez in 4 weeks (May 12, 2025)

Cardiac Monitoring:

- Repeat echocardiogram in 4 weeks
- Weekly BNP and troponin for 4 weeks

Imaging:

- CT Chest/Abdomen/Pelvis in 6 weeks to assess oncologic status

6. Lab Values:

Parameter	Admission (4/9/2025)	Discharge (4/14/2025)	Units	Reference Range
BNP	2,450	780	pg/mL	<100
Troponin I	0.06	0.02	ng/mL	<0.04
Creatinine	1.1	1.2	mg/dL	0.7-1.3
Potassium	4.2	4.5	mmol/L	3.5-5.0
Hemoglobin	12.4	12.2	g/dL	13.5-17.5 (M)
TSH	2.8	-	mIU/L	0.4-4.0

Diagnostic Studies:

Echocardiogram (4/10/2025):

- LVEF 35% (baseline 65% in March 2021)
- Global hypokinesis without regional wall motion abnormalities
- No significant valvular disease
- Grade II diastolic dysfunction
- No pericardial effusion

Cardiac MRI (4/11/2025):

- Confirms LVEF 34%
- No late gadolinium enhancement
- No myocardial edema
- Findings consistent with non-ischemic cardiomyopathy

CT Chest (4/10/2025):

- Stable minimal residual disease at primary site
- No recurrent pleural effusion
- No evidence of disease progression

Electronically Signed By:
Dr. M. Freeman (Medical Oncology)
Date/Time: 2025-04-14 16:30

Dr. S. Patel (Cardiology)
Date/Time: 2025-04-14 15:15

Dr. V. Rodriguez (Pulmonology)
Date/Time: 2025-04-13 14:45