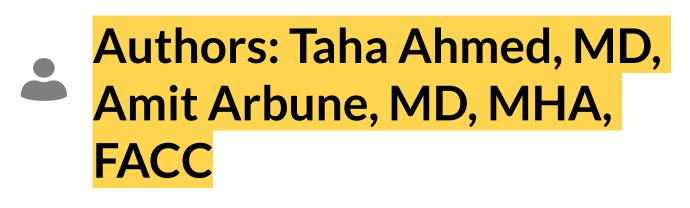
# 5-Fluorouracil-related Cardiomyopathy and Management Strategy

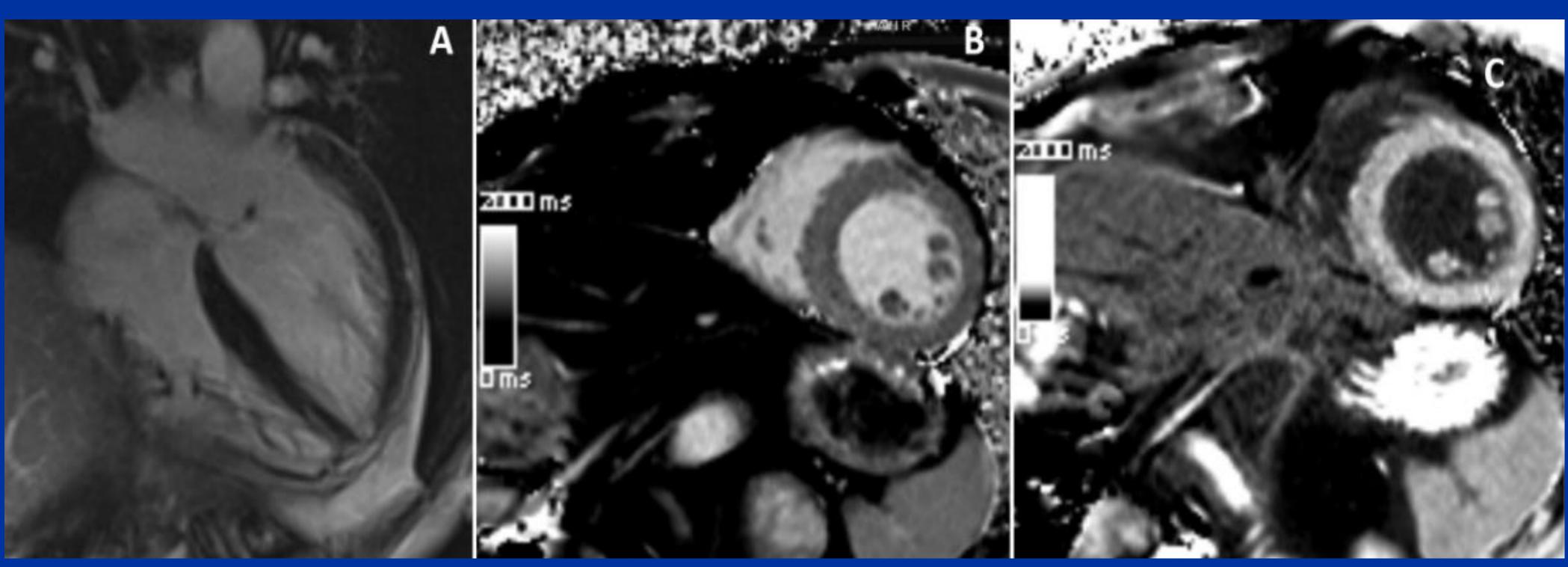


# BACKGROUND

• Clinical awareness and management of 5-FU-related cardiomyopathy

# <u>Case #1</u>

- 46-year-old man with recently diagnosed to the ED with chest pain radiating to his left arm, while on 5-FU infusion, resolving with nitroglycerin.
- Pt hemodynamically stable, EKG unremarkable, HsTnT peaked at 140 ng/L.
- Transthoracic echocardiogram (TTE) revealed reduced LVEF of 30-40% with global hypokinesia, CCTA showed no CAD.
- CMR demonstrated global systolic dysfunction with LVEF of 46%, no LGE, and normal ECV (Figure 1).
- He was initiated on metoprolol succinate, lisinopril and sent home.
- In cardio-oncology follow-up, he denied any complaints, repeat TTE showed normalization of LVEF.
- We decided to proceed with 5-FU rechallenge with our institutional cardioprotective regimen.
- He was hospitalized for FLOXNordic (5-FU bolus) along with nitrates and a calcium channel blocker (CCB).
- Given his persistent low BP, heart failure drugs were held on days of chemotherapy.

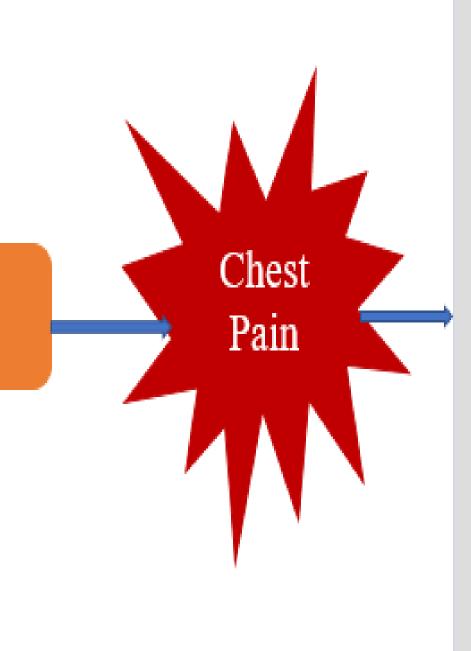


5-FU rechallenge can be considered in patients with colon cancer + liver metastasis presented **5-FU related cardiomyopathy with a multi**disciplinary approach involving oncology and cardio oncology, based upon the following proposed algorithm

> 5-FU Exposure

Figure 1: CMR Images with A-4 Chamber LGE showing no LGE, B- Pre-contrast MOLLI and C- Postcontrast MOLLI with a calculated ECV of 25

Figure 2: Proposed management algorithm for 5-FU related cardiomyopathy



### Emergent Management

- ➢Discontinue infusion ≻EKG/Troponin
- ≻Administer nitrates/CCB ≻TTE
- CCTA vs coronary angiogram to r/o CAD
- $\succ$ CMR to evaluate for cardiomyopathy – inflammation, LGE, T1, T2 mapping
- ➢Diagnosis of 5-FUrelated cardiomyopathy by temporal association and exclusion of confounders

### Subsequent Chemotherapeutic regimen plan

- ►ACE/BB for reduced LVEF
- discussion to assess best chemo regimen with patient before 5-FU rechallenge
- ➤Multidisciplinary ➢Risk/benefit discussion ➤Repeat TTE to assess
- LVEF improvement

## 5-FU re-challenge

- ➢Bolus over infusion
- ▶ Pretreatment: 3-4 hrs prior to 5-FU bolus with nitrates
- ➤CCBs on 5 FU treatment days
- >EKG/Troponin/sl nitro for active chest pains
- ▶Post-treatment: 12-24 hrs post 5FU with nitrates + CCB
- ≻Hold BB & ACE-I if BP low to allow for CCB & nitrate
- ≻Resume BB & ACE-I 24-48 hours after infusion guided by BP

• He tolerated 10 cycles of chemotherapy followed by surgery.

### <u>Case #2</u>

- March 2021 for a second opinion.
- FOLFOX.
- After cycle 1 she was hospitalized for hospice care.
- initiation of FLOXNordic.
- She denied chest pains or heart failure metoprolol succinate.
- global hypokinesis.
- and normal ECV, and an EF of 55%.

## DISCUSSION

- In our patients, we believe it was likely coronary vasospasm given elevated LGE, and normal ECV.
- treating vasospasm, CCBs are contraindicated in HF.
- 5-FU re-initiation should involve a



69-year-old female with metastatic mucinous colon cancer presented to our institute in She had undergone surgery followed by adjuvant chemotherapy using modified

shortness of breath and palpitations. TTE revealed severely reduced EF of 20%, comfort measures were pursued under

After a tumor board discussion and cardiooncology evaluation, a plan was made for re-

symptoms, was started on lisinopril and

• Repeat TTE showed LVEF of 45% with

Stress CMR ruled out ischemia, had no LGE

We used a similar strategy of 5-FU bolus,

CCBs with nitrates on days of chemotherapy and holding HF medications on those days.

• Etiology of 5-FU-related cardiomyopathy is challenging and needs a thorough evaluation.

troponins, reduced LVEF, CMR with no

CCBs and nitrate are the mainstays for

multidisciplinary team approach (Figure 2).

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