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Longitudinal Management Algorithm for Different Severity Types of Myocarditis

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Overview

- Current evidence based on myocarditis subtype
- Questions for discussion to build algorithm until recovery or definitive therapy
  - ❑Subclinical myocarditis
  - ❑Mild-moderate myocarditis
  - ❑Severe myocarditis
  - ❑Recurrent myocarditis or chronic myocarditis

First Prospective Pilot Study: Exercise after Myocarditis

Journal of Cardiovascular Translational Research
https://doi.org/10.1007/s12265-020-09983-6

CORRESPONDENCE

A Prospective Pilot Study to Identify a Myocarditis Cohort who may Safely Resume Sports Activities 3 Months after Diagnosis

D. Patriki[1] · N. Baltensperger[1] · J. Berg[1] · L. T. Cooper[2] · C. K. Kissel[1] · J. Kottwitz[1] · M. Lovrinovic[1] · R. Manka[1] · F. Scherff[1] · C. Schmied[1] · F. C. Tanner[1] · T. F. Luescher[3,4] · Bettina Heidecker[1,5]

Exercise After Myocarditis: Results

Baseline characteristics all cases of myocarditis	Time of symptom onset	3-month follow-up	6-month follow-up	12-month follow-up
CMR/Echocardiography	n = 30	n = 30	n = 26	n = 19
Mean				
Restir				
Numb				
Numb				
48-h-I				
Numb				
Number of benign arrhythmias	/	6	6	4

The problem:

- Small study: Not sufficient statistical power
- Not sufficient data in the literature to provide evidence for guidelines

Patriki, … , Lüscher, ***and Heidecker; Journal of Cardiovascular Translational Research****, 2020*

Subclinical Myocarditis

Myocardial injury with structural changes (CMR+EKG/TTE) without symptoms

Subclinical Myocarditis

First encounter:

At risk: Exposure to possible trigger: COVID-19, mRNA vaccine, viral illness, medications, additional triggers?

Fam. Hx., what other information?

Diagnostic tests are obtained: Troponin, EKG, TTE, CMR, additional tests? Less? Individualize? More comprehensive workup if athletes?

Initiation of therapy: None? ACE-inh? Beta-Blocker? NSAIDS and/or Colchicine? Dosing.

Consider factors for decision making, e.g. athletes, arrhythmias or syncope at presentation

Subclinical Myocarditis

Next encounter/first follow-up:

Clinical follow-up at 1 month in COVID-19 and vaccine related myocarditis; in individual cases CMR imaging after 4 months – in whom would you do CMR follow-up?

Earlier follow-up in COVID-19 and vaccine-related myocarditis given limited knowledge and understanding about clincal course?

„Classic“ myocarditis: Follow-up in 1 or 3 months? Even later? Will that depend on etiology?

What is the next appropriate step for surveillance/ diagnostic/management strategies ?

Return to exercise after 3 months?

Subclinical Myocarditis

Next encounter/first follow-up:

Laboratory data: Troponin, CRP?, Leukocytes?, other tests?	TTE
12-lead ECG	Exercise stress test
F/u CMR in professional athletes or if LGE ≥20% of LV volume at baseline?	24h-EKG

Additional follow-up 3-4 months after resumption of exercise with same tests as on **first follow-up**

How long if any medication? Stop after 6 months?

Mild - Moderate Myocarditis

Myocardial injury with structural changes (CMR+EKG/TTE, EMB) with symptoms of chest pain or heart failure

Mild - Moderate Myocarditis

First encounter:

Diagnostic tests are obtained: Troponin, EKG, TTE, CMR, additional tests? Less? Individualize? Is there ever an indication for EMB in mild cases? More comprehensive workup if athletes?

Always admission with telemetry monitoring at least overnight. Up to and beyond 3 days, if concerns about arrhythmias/syncope.

Wide range of practice given limited data – decide on individual basis.

Other suggestions regarding duration of monitoring?

Treatment with low dose ace-inh. + beta-blocker, NSAIDs, colchicine

Mild - Moderate Myocarditis

Next encounter/first follow-up:

Clinical follow-up within 1 month

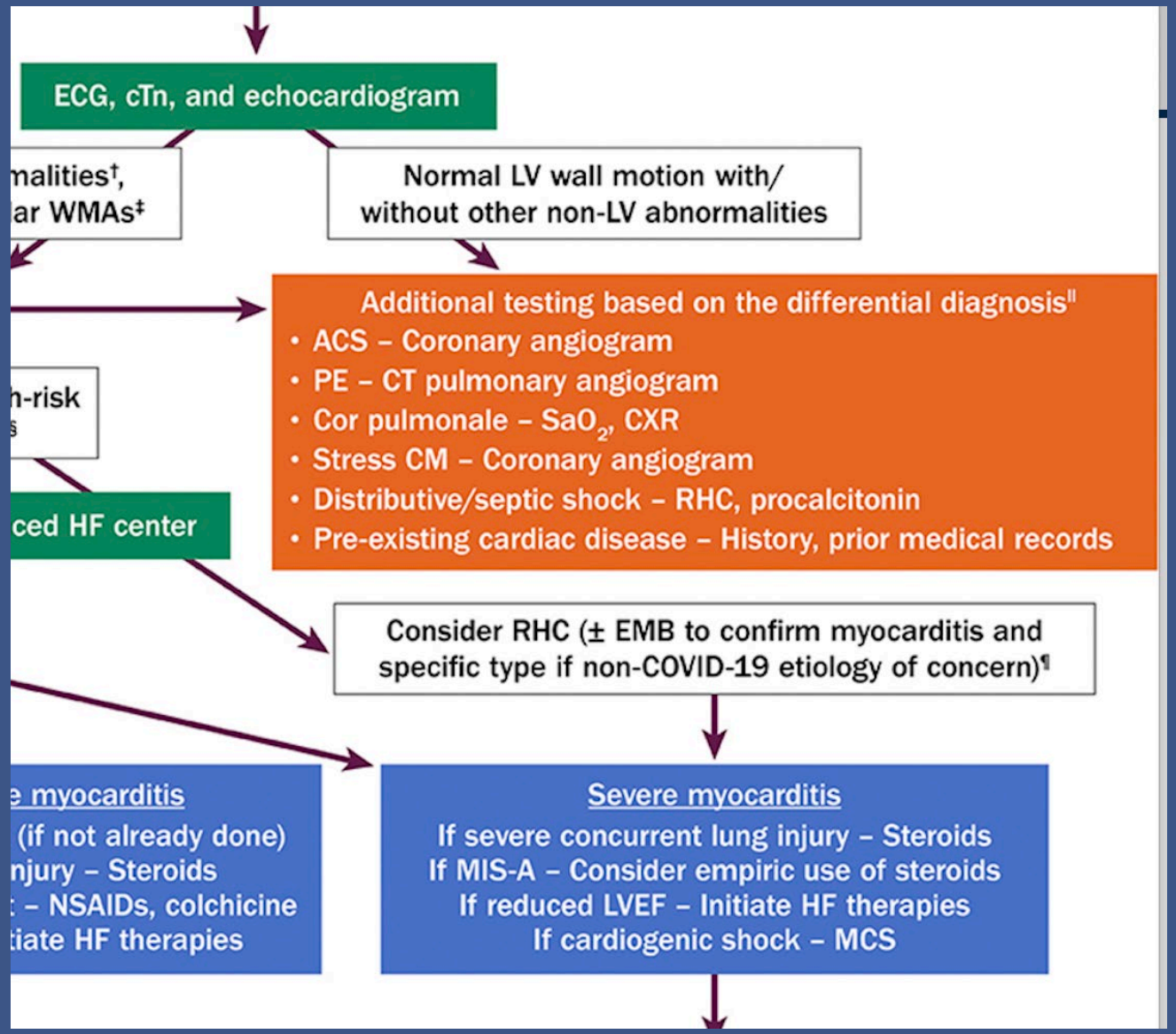
Next follow up in 3-4 months (individual decision depending on the patient‘s condition at 1 month follow-up). Will that depend on etiology? Earlier in COVID-19 and vaccine-related myocarditis- less known about clincal course?

Return to exercise if troponin, 24h-EKG, exercise stress test and TTE ok.

Severe Myocarditis:

Myocardial injury with cardiogenic shock

Severe Myocarditis



- Very individual decision trees given the severity of the disease. GDMT.
- Immunosuppression
- Specialty care coordination – may require MCS and Tx evaluation
- Anything missing for ”classic” myocarditis?

Modified from Gluckmann et al, JACC 2022

Recurrent Myocarditis:

Search for autoimmune,
genetic and treat underlying etiology?

Chronic Myocarditis:

Search for autoimmune, genetic predisposition
and treat underlying etiology?

Targeted approach: Which genes? Desmoplakin?
Evolving data suggesting that panels related to
DCM are associated with severe cases

Thank you for your attention!

Let‘s discuss