

LONG-TERM CARDIOVASCULAR OUTCOME OF CHILDREN WITH MIS-C: ITALIAN MULTICENTER EXPERIENCE.

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Introduction

MIS-C is a multisystem inflammatory syndrome characterized by severe systemic hyperinflammation and multi-organ failure. Cardiac involvement has already been described in patients with MIS-C; some reports described patients with severe ventricular dysfunction or cardiogenic shock, requiring mechanical ventilation, inotropic support or ECMO.

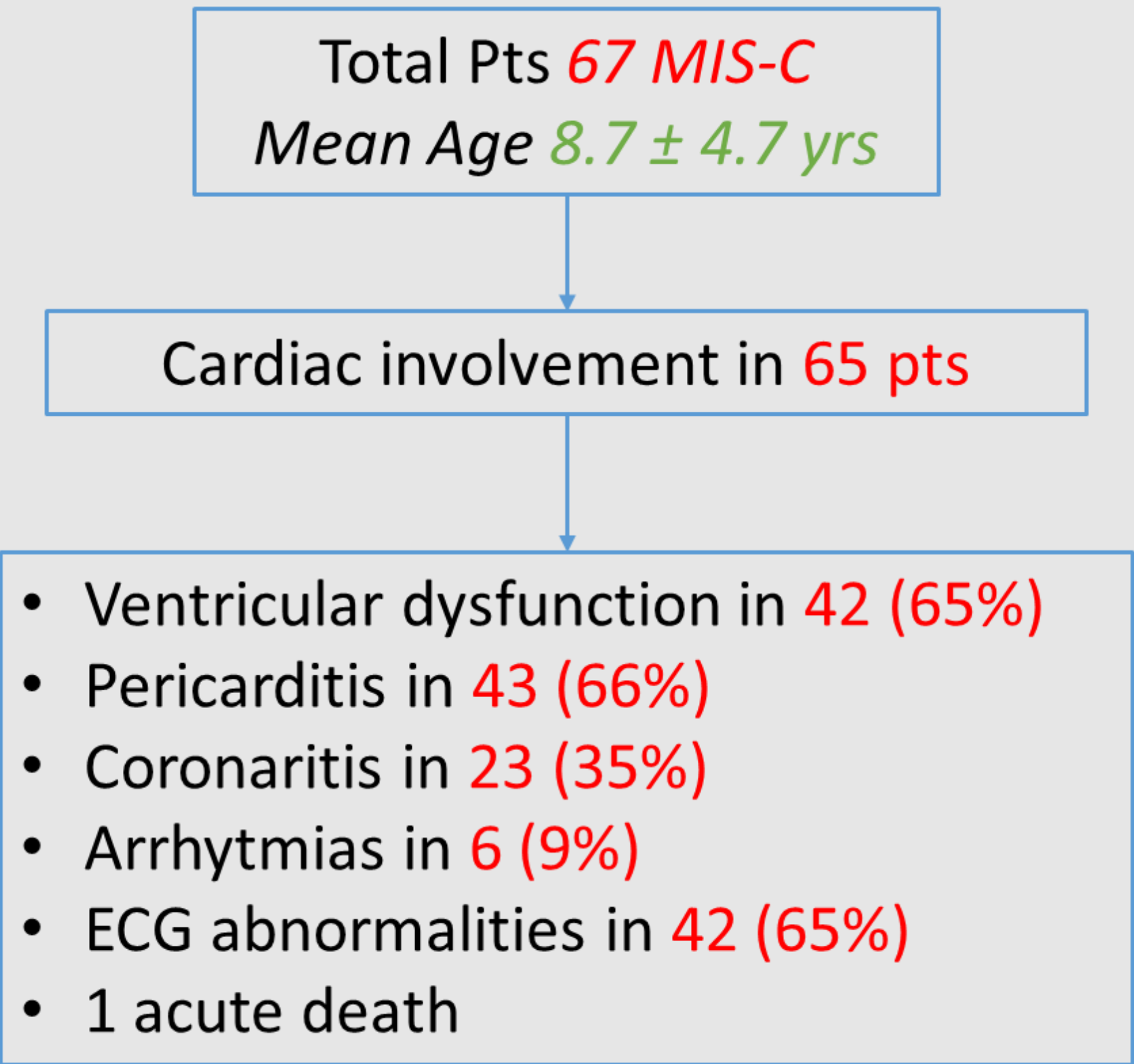
Purpose

To describe long term cardiovascular outcome in a cohort of pediatric patient with MIS-C, admitted to two Italian Pediatric Referral Centres.

Methods

All paediatric patients affected by MIS-C and admitted to Bambino Gesù Children Hospital and Giannina Gaslini Institute COVID Centers from March 2020 to May 2022 were evaluated and patients with MIS-C included. ECG and echocardiogram were daily performed during acute event. Troponin were repeated every 6 hours; NT-proBNP once a day if clinical condition were stable. Holter monitoring was reserved in patients with cardiac conduction or repolarization disturbances and/or arrhythmias. After discharge, patients were evaluated at 1 month, 3 months, 6 months and 1 year with ECG, 2D Doppler echocardiogram and cardiac biomarkers. In patients older than 8 years cardiac magnetic resonance (CMR) was performed

RESULTS

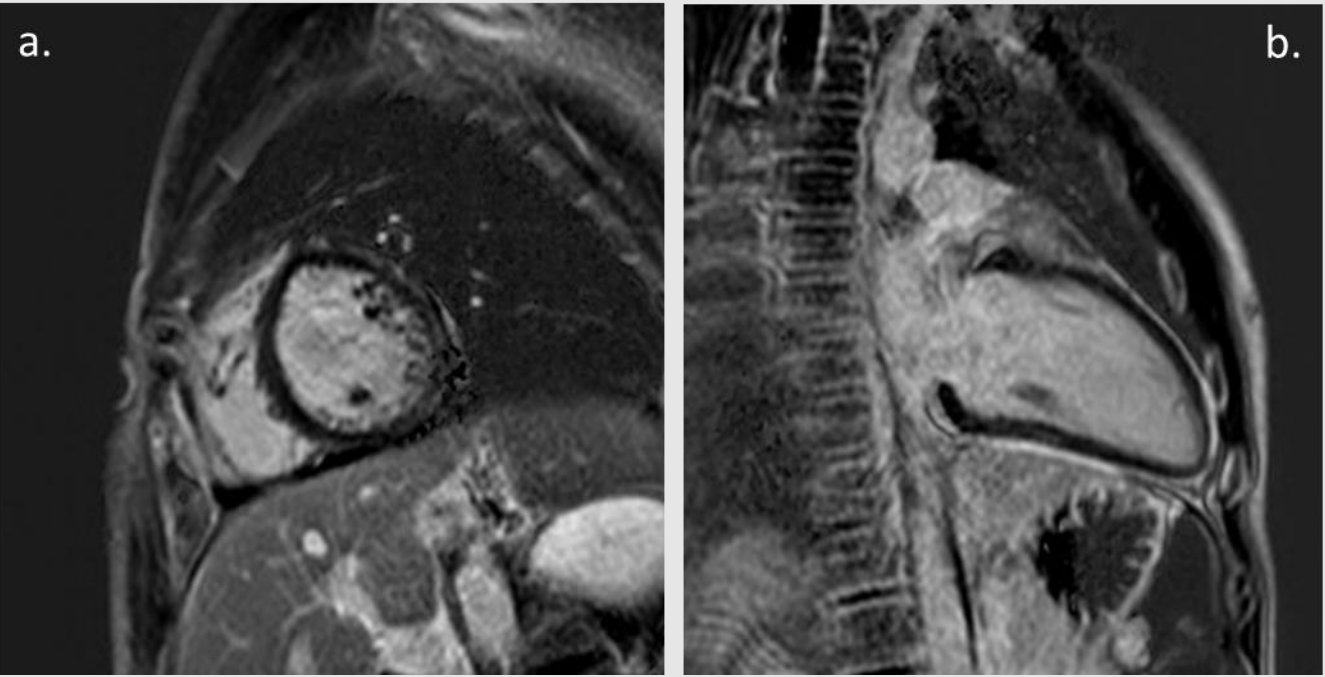


Mean FU 9 ± 6.2 months

FU duration	MISC patients
1 month FU	100%
3 months FU	87%
6 months FU	58%
1 year FU	47%

	Acute phase	Discharge	1 month	3 months	6 months	1 year
ECG anomalies	65%	15%	3%	0	0	0
Arrhythmias	9%	0	0	0	0	0
Pericarditis	66%	8%	2%	2%	0	0
Coronaritis	35%	11%	10%	3%	2%	0
LV dysfunction	65%	3%	3%	0	0	0

	Acute phase	Discharge	1 month	3 months	6 months	1 year
Ejection Fraction (mean)	49 ± 14 %	59 ± 9 %	61 ± 3 %	62 ± 4 %	62 ± 4 %	61 ± 3 %
NTproBNP (mean)	9594 ± 10542	123 ± 143	36 ± 28	53 ± 34	41 ± 22	35 ± 30
hsTp (mean)	125 ± 241	4 ± 4	3 ± 4	3 ± 2	3 ± 2	3 ± 3
CMR LGE n° positivi/n° of CMR performed	-	-	-	-	-	10/20
Therapy	Inotropes Diuretics IVIG Aspirin LMWH Steroids Anakinra	Steroids Aspirin	Steroids Aspirin	Aspirin	No	No
Deaths	1	0	0	0	0	0



Conclusion

Our experience showed that cardiac involvement in MIS-C patients is almost the rule. LV dysfunction and pericarditis are the most frequent manifestations. However, patients’ clinical course was satisfactory and no additional events have been observed during FU, apart long-term myocardial scars in 50% of patients that performed CMR. Early treatment is necessary for early recovery of patients and no late adverse events.