**Supplemental text 1**:

Narayana Institute of Cardiac Sciences is a *Joint Commission International* accredited quaternary cardiac care center established in the year 2000. The heart transplant program at NICS strictly adheres and complies with the laws and regulations of The State of Karnataka, The Government of India (National Organ and Tissue Transplant Organization under The Directorate General of Health Services) and has strict compliance with the ISHLT ethical guidelines and statement as well as the 2008 Declaration of Istanbul.

**Supplemental text 2:** Retrospective case-cohort study of all patients age ≤ 21 years with newly diagnosed non-ischemic dilated cardiomyopathy and advanced heart failure (New York Heart Association HF Class ≥ 2).

\*Reasons for no CMR imaging include – deemed high risk for sedation for an elective procedure and subsequent non-availability, baseline tachycardia and parents opt-out.

**Supplemental text 3:** Cardiac magnetic resonance (CMR) imaging institutional protocol.

As per our institutional guidelines, patients after written informed consent who have complete clinical assessment and echocardiographic evaluation undergo CMR imaging. Exclusion criteria for CMR imaging included usually accepted contraindications like patients with implantable metallic devices, renal insufficiency, claustrophobia etc. The CMR studies were performed with the patient in the recumbent position, using a 3-T scanner (Ingenia, Philips Healthcare, Netherlands). Younger children (age < 6 years) typically required some form of sedation. Free breathing protocols were used thereby avoiding the requirement of general anaesthesia with most studies performed under intravenous sedation (a protocol-based combination of midazolam, ketamine or propofol was used by the dedicated pediatric cardiac anaesthesia team). Images were acquired during end-expiratory breath-hold if the child was cooperative; otherwise imaging was performed in free breathing. Studies were performed in accordance with the standardized protocols as described previously.12 Cine images of long-axis views (4-chamber, 2-chamber, and 3-chamber views) and outflow tract views were acquired using a balanced steady-state free precession sequence. Volumetric cavity assessment was obtained by whole-heart coverage of short-axis slices without any gap. Late gadolinium enhancement (LGE) imaging was performed 10-15 minutes after administration of contrast (0.2 mmol/kg body weight). Images were acquired in both short and long axis views ensuring whole heart coverage in phase sensitive inversion recovery sequence. Native and post-contrast myocardial T1 mapping was integrated into the imaging protocol. A steady-state free precession, single breath-hold shortened modified Look-Locker inversion recovery (shMOLLI) sequence was used for T1 mapping, performed in a mid-cavity short-axis slice before and at 15 min after contrast administration.

CMR analysis was performed using commercially available software (Philips Intellispace, Philips Healthcare). Endocardial LV borders were traced at end-diastole and end-systole. The papillary muscles were included as part of the LV cavity volume. All volumetric indexes were adjusted to body surface area. The LGE images were specifically evaluated for the presence of regional fibrosis. Motion correction image preparation step was done to overcome the occasional undesired breathing motion in T1 maps. As previous studies have demonstrated substantial segmental variation in T1 values, greatest in lateral and least in the septal segments, region of interests (ROIs) were placed within the septal myocardium.13, 14 Care was also taken to avoid contamination with signal from the blood pool. Heart rate correction was applied for T1 values when it exceeded 80 beats/min.13, 14 Normative data for native T1 values in children are described to be similar to those in normal adult subjects.15 Normal native T1 values derived as per our institutional protocol are 1250 ms in males and 1280 ms in females. Myocardial ECV (Extra Cellular Volume) was calculated in patients whose hematocrit was available.

**Supplemental Table1:** Patients with DCM and advanced HF who were lost to follow up.

|  |  |
| --- | --- |
| Number of patients, n | 11 |
| Male, n (%)  Median age in years [IQR]  Hematocrit, % (mean ± SD)  Serum creatinine, mg/dL  NYHA HF class at diagnosis, n (%)  Class II  Class III  Echocardiography parameters  LViDD Z score  LVEF, %  CMR  iLVEDV (ml/m2)  iLVESV (ml/m2)  LVEF (%)  RVEF (%)  LGE  Present, n  Absent, n  Native T1 (ms)  Increased, n  Normal, n | 6 (55%)  13.5 [2-18]  36.5±1.8  0.5±0.1  7 (64%)  4 (36%)  +2 [2-2.8]  31 [23-39]  124 [109 – 152]  85 [65 - 105]  37 [27 – 41]  58 [38 – 60]  2  9  1357 [1234 – 1405]  5  3 |

All values are median [interquartile range] unless otherwise specified; NYHA HF – New York Heart Association heart failure.