**Additional file 1: Table S1**

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| **Patient** | **Age (years)** | **Weight (kg)** | **Diagnostic features** | **Indication for CMR** |
| **1** | 13 | 53 | Family history of ARVCPalpitations  | Presence of ARVC criteria in CMR |
| **2** | 7 | 47 | Chest painBicuspid aortic valveAortic coarctation | LV functional analysis LV mass Presence of scar |
| **3** | 15 | 55 | TGA | Coronary arteries, valvular and ventricular assessment |
| **4** | 15 | 72 | Aortic coarctation Bicuspid aortic valve – mild AR | LV mass analysisValvular assessment |
| **5** | 13 | 42 | Alcapa syncrome, moderate mitral regurgitation | LV functionMR quantification |
| **6** | 0.41 (5 months) | 6.2 | DILV/ TGA/ VSD Aortic coarctation | Preoperative studyLocation of VSDVentricular size and function |
| **7** | 13 | 53 | Tricuspid regurgitationPrevious endocarditis | Ventricular function and volumeTR quantification  |
| **8** | 6 | 22 | Tetralogy of Fallot | PA branches studyRV functionPR quantification |
| **9** | 14 | 70 | Mild LVH Athlete | LV mass and function analysis |
| **10** | 15 | 75 | TGA Moderate PAs stenosis | Assessment of MPA and PA branches |
| **11** | 10 | 34 | Mild ascending aorta dilatation | Ascending aorta assessment for on-going dilatation |
| **12** | 9 | 39 | Aortic coarctation | LV mass and functionAortic arch study |
| **13** | 12 | 60 | ccTGA | Ventricular function and valvular study |
| **14** | 15 | 76 | Dilated ascending aortaPectus carinatum | Ascending aorta assessment for on-going dilatation |
| **15** | 17 | 51 | Bicuspid aortic valveDilated ascending aorta Previous aortic valve endocarditis | LV mass and functional analysisAR quantification |
| **16** | 2 | 15 | Perimembranous VSD Brugada syndromeLV non-compaction | Assessment of compacted/non compacted myocardiumLV function |
| **17** | 13 | 44 | ccTGA, Left SVC Subpulmonary stenosis | Ventricular function and valvular study |
| **18** | 16 | 51 | Duchenne muscular dystrophyMild LV function impairment | LV functional analysis |
| **19** | 15 | 62 | TGA PAs stenosis | Assessment of PA branches |
| **20** | 3 | 11 | Tetralogy of Fallot Severe pulmonary regurgitation | Ventricular function and sizePR quantification |
| **21** | 13 | 60 | Dilated ascending aortaConnective tissue disorder | Ascending aorta assessment for on-going dilatation |
| **22** | 4 | 14 | DextrocardiaccTGAMultilevel pulm stenosisAsplenia | Ventricular function and valvular studyAssessment of PA branches  |
| **23** | 8 | 17.5 | Bicuspid aortic valve Aortic Coarctation | LV functional analysis and mass quantification |
| **24** | 14 | 60 | Alcapa syndrome | LV functional analysisMR quantification |
| **25** | 1 | 10 | DORV | Preoperative assessmentVentricular volumesVSD location and relation to great arteries |
| **26** | 15 | 44 | PDA | Ventricular volumesQp: Qs quantification |
| **27** | 8 | 42 | Supravalvar aortic stenosis Aortic arch hypoplasia | LV function and valvular study |
| **28** | 0.24 (2 months) | 4.3 | TOF Right aortic archPDA | Preoperative assessmentRV volumeMPA and PA branches assessment |
| **29** | 10 | 28 | DORV | Ventricular and valvular assessment |
| **30** | 9 | 22 | TGA - ST changes during exercise | Coronary artery assessment LV function |
| **31** | 5 | 19 | TGA Mild aortic root dilatation | Coronary artery assessment Ascending aorta assessment for on-going dilatation |
| **32** | 14 | 58 | Left atrial isomerismAVSDDextrocardiaModerate AVVR  | Assessment of Fontan circulation |
| **33** | 15 | 41 | TOFPulmonary regurgitationRV dilatation | Ventricular function and sizePR quantification |
| **34** | 15 | 44 | HLHS  | Assessment of Fontan circulation |
| **35** | 12 | 62 | TOFPulmonary regurgitationRV dilatation | Ventricular function and sizePR quantification |
| **36** | 12 | 50 | TOFPulmonary regurgitationRV dilatation | Ventricular function and sizePR quantification |
| **37** | 0.32 (3 months) | 5 | Tetralogy of FallotCritical pulmonary stenosisHypoplastic pulmonary arteries | Ventricular function and sizeMPA and PA branches assessment |
| **38** | 6 | 18 | TOFPulmonary regurgitationRV dilatation | Ventricular function and sizePR quantification |
| **39** | 14 | 80 | Mild ascending aorta dilatationBicuspid aortic valve | Ascending aorta assessment for on-going dilatation |
| **40** | 17 | 63 | Supraventricular tachycardia Tachymyopathy | LV functional analysis |