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Features and outcomes of Acute Myocarditis in children

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This study was to assess features and outcomes of children with acute myocarditis.
Methods : Patients <18y with acute myocarditis (proved by virology and/or MRI and/ or complete recovery of myocardial function) were included. Clinical data, echocardiographic parameters and outcomes were collected and cases divided in groups I (< 2y), II (2 to 10y) and III (> 10y).
Results: 72 patients were included (1983 to 2012), 30males, aged 4.1±5.1y(med1.5y): 43 in group I, 17 in II and 12 in III. Heart failure was present at onset in 57cases(78%): 8 cardiogenic shock(12%), 30 severeHF(44%) were more frequent in groups I(56%) and II(46%) than in III(17%, p< 0.0001), while chest pain (15.5% of all) was more frequent in III (83%). LVSF at diagnosis was 18.4±9%(med16%):16% and 15% in groups I and II vs 30.5% in III(p= 0.0001). Aortic VTI was 11.4±5.8cm(med10):8cm and 11 in groups I and II vs 17 in group III (p< 0.05). Mitral regurgitation was present in 76.5%, pericarditis in 16.4%, thromboembolic events occurred in 5cases(7%), arrhythmias in 7(10%). Virus was positive in 27cases=37.5% (1virus in 24, >1viruse in 3). Nine patients died (13%) within 2months post-diagnosis (2days to 8.6months), 1 was transplanted(3rdmonth), 19 have sequellae(27.5%), 40 completely recovered(58%), at FU= 5.5±5.6y(med4y). Inotrope support was needed in 34cases(47%):51%, 59% and 16% of groups I, II and III respectively(p< 0.0001). Six patients(8.3%, 1 in groupIII) needed mechanical circulatory support (3ECMO, 3VAD), within day-14 from onset: 1 died on support, 5 were weaned-off (duration of support:4d to 3mos). Survival was 96%, 90%, 87.5% and 86% at 1month, 3months, 6months, 2y and 10y of FU. All patients in group III survived. Ten-year survival was 81.4% in group I and 88.2% in II (p= NS). LVSF improved from 18.4±8.9%(med16%) at onset, to 24.6±10.3%(med23.5%) at 1stmonth, 26.5±8.6%(med26.5%) at 3rdmonth, 30.7±8.6%(med29.6%) at 6thmonth, 38±7%(med37%) at last FU.
Conclusion: Acute myocarditis in children has favourable outcomes despite early mortality. Myocardial dysfunction and heart failure are less frequent in patients > 10 years of age. Mechanical circulatory support successfully lessens mortality. Myocardial contractility can progressively improve within the first 6months after onset of disease.