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Physical capacity in children with congenital heart disease: Experience of a Chilean pediatric cardiovascular center

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Introduction & Aim: Physical capacity assessment is an essential tool for the characterization, prognosis, and response to treatment in children with congenital heart disease (CHD). The diminished physical capacity increases the risk of cardiovascular disease and the acquisition of other comorbidities associated to inactivity. This research aimed to describe the physical capacity in children with CHD in a specialized pediatric cardiovascular center in Chile.

Methods: We review the clinical records, and cardiopulmonary exercise test (CPET) of patients admitted between 2015 and 2017 in Cardiovascular Center of Dr. Luis Calvo Mackenna Children's Hospital in Santiago of Chile. We describe the anthropometric measures and the following physical capacity outcomes: Peak oxygen uptake (VO₂ peak), work rate peak (WRpeak) and heart rate peak (HRpeak). We used the SPSS v23.0 software for the statistical analysis.

Results: We analyzed the CPET of 166 children: 137 with CHD and 29 without CHD, in which 107 were boys. Mean age was 13.1±2.4 years; mean height was 155 cm (144-164), mean weight was 48 Kg (40-58). Mean Body Mass Index was 20.7±3.9 (Z-Score +0.5±1.4). VO₂ peak was 28.0 (24.0-32.0) ml/Kg/min for CHD-group and 34.0 (27.0-41.0) ml/Kg/min in nonCHD-group (p=0.001). This difference also exists between each CHD-subgroup and nonCHD-group. The WRpeak was 144.7±52.4 watts for CHD-group and 180.3±47.3 watts for the nonCHD-group (p=0.001), and HRpeak was 164 bpm (142-177) for CHD-group and 174 bpm (147-190) for the nonCHD-group (p=0.06).

Conclusion: VO₂ peak and WRpeak were lower in children with CHD respect the nonCHD.

Biography

Bernardita Lopetegui has completed her Pediatric Cardiology Fellowship from University of Chile and had Electrophysiology training. She is the Head of Arrhythmia's section of Dr. Luis Calvo Mackenna' Children Hospital. She is the Assistant Professor and Deputy Head of Pediatric Cardiology Fellowship from University of Chile School of Medicine.

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