

Activity in Adolescents with Congenital Heart Disease (CHD)

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Introduction:

Ability to exercise is an important contributor to and indicator of physical health. Many patients with CHD are adolescents and their attitude to exercise is variable. Exercise capacity is an important prognostic factor in acquired heart disease and may have a similar role in CHD. We aim to examine exercise ability in adolescents with major CHD compared to those with a minor diagnosis. □

Methods:

Patients aged 12-20 years were identified using the Northern Ireland regional database (HeartSuite). Participants were categorised as having major or minor CHD and divided into four diagnostic subgroups. They completed a validated questionnaire rating their exercise capacity. Participants also underwent a formal exercise stress test using the Bruce Protocol and measurement of free-living activity using an ActiGraph accelerometer. Results were analysed using parametric methods.

Results:

143 patients (mean age 15.6 years) consented to participate, 86 were male (60%) and 105 had major CHD (73%). Diagnostic subgroups included 39 acyanotic (27.3%), 61 acyanotic corrected (42.7%), 30 cyanotic corrected (21.0%) and cyanotic palliated 13 (9%). 134 participants (93.7%) took part in regular exercise each week, for 68 individuals (47.6%) this was more than 3 times per week. There was no significant difference in activity score between study groups. 142 participants attempted an exercise test; more complex patients performed worse at peak exercise. Exercise time for acyanotic group 11.73 mins (sd 3.74) compared to 8.26 mins (sd 4.08) in cyanotic palliated group, (p value 0.002 (1.32, 5.61)). Patients with major CHD, especially acyanotic corrected group, had significantly higher activity counts. This difference was reflected across sub-group analysis (p value 0.007) with acyanotic patients having the lowest activity scores. □□

Conclusions:

The majority of young people with CHD, in this group, take part in regular exercise. Surprisingly complex patients rate themselves to be as active as those with minor CHD. While accelerometer data indicate that group may be more active day to day, they are limited in terms of peak exercise duration. Interventions targeted towards maintaining or increasing exercise capacity may confer prognostic benefits for these patients. □