

The effect of obesity on cardiac rehabilitation in patients who have undergone coronary artery bypass graft surgery at national hospital of Sri Lanka

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Coronary artery bypass grafting surgeries (CABG) can be considered as a main re-vascular procedure for patients suffering from coronary artery disease. Cardiac rehabilitation (CR) which is a main component of post-operative management after CABG, includes exercise therapy, psychological counseling, behavioral interventions and risk factor modification. Three phases in CR are Phase 1(CRPI)-in-patient program, Phase 2(CRPII)-ambulatory outpatient rehabilitation program and Phase 3(CRPIII)-community/maintenance programs. This study was conducted to identify the effect of obesity, which is a major risk factor all around the world on CR based on a case control observational study with 100 subjects between 40-70 years. They were both male and female patients attend to CR program, cardiology unit, National hospital in Sri Lanka. Subjects were selected according to convenient sampling method. Five data collection tools were used. The socio-demographic characteristics were evaluated by socio-demographic questioner, cardiovascular endurance and fatigability were evaluated by six minute-walk test (SMWT) and Borg scale (BS). Anxiety and depression level was evaluated by hospital anxiety depression scale (HAD). Overall quality of life status was evaluated by quality of life (QOL) questioner cardiac version. Data collection 1 was done at the first day of CRPII and Data collection 2 was done at the final day. The study population consisted with 33% obese subjects and 67% non-obese subjects (Age 58.33±7.45 years). Pre-test results of obese group were recorded as SMWT is 356.4±58.7, BS is 7.52±1.62, HAD is 13.46±4.15 and QOL is 18.58±0.75. Post-test results of obese group were recorded as SMWT is 437.3±68.2, BS is 4.61±1.30, HAD is 7.82±3.25 and QOL is 19.50±1.0. Pre-test results of non-obese group were recorded as SMWT is 373±62.6, BS is 6.79±1.83, HAD is 12.96±4.15 and QOL is 18.6±0.86. Post-test results of non-obese group were recorded as SMWT is 470±66.3, BS is 3.58±1.57, HAD is 7.19±3.40 and QOL is 19.6±1.3. Both groups showed high statistical significance for pre and post test results of SMWT, BS, HAD and QOL (P <0.0001). The improvement of each test in obese group were recorded as SMWT is 80.9±26.7, BS is 2.91±1.55, HAD is 5.64±2.67 and QOL is 0.93±0.78. The improvement of each test in non-obese group was recorded as SMWT is 97.0±33.4, BS is 3.21±1.69, HAD is 5.76±3.23 and QOL is 1.03±0.93. SMWT was the only tool of data collection which showed a better improvement in non-obese group than obese group (P = 0.02). CRPII improves cardiovascular endurance, fatigability, anxiety / depression and overall quality of life in patients undergone CABG. Non-obese group showed better improvement in cardiovascular endurance than obese group after CRPII which suggest that obesity has an effect in improvement of cardiovascular endurance in CRPII.

Keywords: Cardiac rehabilitation, Coronary artery bypass grafting surgery, Coronary artery disease, Obesity