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## The impact of a short-term cardiac rehabilitation program on activities of daily living in elderly patients with chronic heart failure

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**Introduction:** A high proportion of elderly patients with Chronic Heart Failure (CHF) experience dyspnea and fatigue during the activities of daily living (ADLs).
**Purpose:** We aimed to determine 1) the VO2 peak of some basic ADLs comparing it to VO2 peak at CardioPulmonary Exercise Test (CPET) and 2) the effects of 3-week inpatient cardiac rehabilitation program on ADLs' performance.
**Methods:** At entry and at the end of a 20-day cardiac rehabilitation program patients performed an ADL-test consisting of five task-related ADL activities and two time-related ADL activities while wearing a metabolimeter mobile device (K5, Cosmed). Task-related activities were: 1) to put on and take off socks, shoes and jacket (ADL 1); 2) to fold eight towels (ADL 2); 3) to put 6 bottles on a shelve (ADL 3); 4) to make a bed (ADL 4); 5) to go up and down 1-floor stairs (ADL 5). Time-related ADL activities were: 1) to sweep the floor for 4 minutes (ADL 6) and 2) to walk for six minute (6MWT). Metabolic load, oxygen uptake, ventilation, heart rate and symptom of dyspnea were computed for each ADL. During the program, patients performed a CPET.
**Results:** Fifty-six CHF patients [89% men; age 72±6 years; Ejection Fraction (EF) 38±12%; 66% with EF $<$40%] were enrolled. At entry, the least demanding ADL [expressed as proportion of peak oxygen uptake (VO2 peak) reached at CPET] was ADL 3 with 53,14±18.53%, while the most challenging was the 6MWT with 116.81±34.48%. Forty-two (75%) patients reached the VO2peak of CPET during 6MWT. After rehabilitation, there was a significant decrease in the time required to perform the task-related activities (ADL 1–5) [from 382.25±114.90 to 354.48±116.92 seconds, p=0.0175] and a significant increase in the distance covered during 6MWT [from 421.35±81.64 to 448.84±89.69 meters, p=0.000]. Moreover, following rehabilitation a significant decrease of heart rate in ADL1, ADL 3 and ADL 5 and a significant decrease of dyspnea in ADL 5, ADL 6 and 6MWT was recorded.
**Conclusion:** A comprehensive cardiac rehabilitation program can improve ADL performance due to the change of some physiological variables during effort. Further studies about the role of dedicated rehabilitation program (i.e. occupational rehab) are necessary.