**Supplemental Digital Content**

GC is a 60 yy old woman with a remote history of Graves' disease. She has a history of heart failure with reduced ejection fraction that was nonischemic and thought to be triggered by atrial fibrillation secondary to thyrotoxicosis. She has been managed medically for a number of years. Her initial ejection fraction of 20% eventually returned to normal. More recently, she experienced exertional chest pain and increasing dyspnea. She was lying on the couch when she attempted to get up and instead rolled onto the floor unconscious. Her husband immediately began chest compressions and noted that she had only shallow/abnormal respirations. Emergency medical services arrived within 3 min and noted **Torsades de Pointes**on electrocardiogram. She was shocked twice by EMS and transferred to the hospital. In the hospital she was intubated and experienced several runs of ectopy and polymorphic ventricular tachycardia that spontaneously resolved. A left heart catherization revealed no evidence of coronary artery disease. She underwent automatic implantable cardioverter defibrillator placement. She was in atrial fibrillation at the time of implantation.

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| At phase 2 cardiac rehabilitation (CR) entry she underwent a cardiopulmonary exercise tolerance test utilizing a modified Naughton protocol. Her cardiorespiratory fitness was determined to 35% below average for age, sex, and diagnosis matched individuals. She reported that the reason for stopping the test was “shortness of breath”.Her goals for CR were to “get in better shape" (i.e. increase her exercise capacity), return to gardening/yard work and lose weight. Her baseline medications were as follows: Carvedilol 25 mg BID, ASA 81 mg daily, and Losartan 25 mg daily; Apixaban 5 mg; Fluoxetine 20 mg/5 mL; Pantoprazole 40 mg.Her Pre- (along with Post-) CR measures for body weight and cardiorespiratory fitness are included in Table 1. Table 1 |

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|  | Pre-CR | Post CR | % change |
| Exercise Tolerance Test Time, min | 3:20 | 4:30 | 35 |
| VO2peak, mL\*kg-1\*min-1 | 11.8 | 16.1 | 36 |
| Respiratory Exchange Ratio | 0.9 | 1.08 | 20 |
| Body weight, lb | 223 | 206 | 8 |

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| Table 2 includes exercise and body weight at CR session 1 and 18. She exercised on both a treadmill and a seated stepper and the intensity and duration were increased as tolerated.Table 2

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| Session | TM Time (min) | TM Sp/grade(mph/%) | TMHR (bpm) | TMRPE | SSTime(min) | SSResist | SSHR(min) | SSRPE | Body Weight(lb) |
| 1 | 10 | 1.2 / 0 | 99 | 12 | 10 | 2 | 100 | 12 | 223 |
| 18 | 20 | 1.3 / 0 | 100 | 12 | 20 | 4 | 99 | 13 | 226 |

Abbreviations: HR, Heart Rate, Sp/grade, Speed/grade, SS, Seated Stepper, TM, Treadmill.At approximately the time that corresponded with her 18th CR session she was assessed in the heart failure clinic. At this time she started on empagliflozin 10 mg with a plan to, in 2 wk, start on Aldactone and to switch from Losartan to sacubitril/valsartan. At the same time she also started on semaglutide.She continue to attend CR and Table 34 includes exercise and body weight at sessions 24 and 36.Table 3

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Session | TM Time (min) | TM Sp/grade(mph/%) | TMHR (bpm) | TMRPE | SSTime(min) | SSResist | SSHR(min) | SSRPE | Body Weight(lb) |
| 24 | 25 | 1.4 / 0 | 108 | 12 | 25 | 5 | 100 | 12 | 223 |
| 36 | 30 | 1.6 / 0 | 106 | 12 | 20 | 6 | 103 | 13 | 206 |

Abbreviations: HR, Heart Rate, Sp/grade, Speed/grade, SS, Seated Stepper, TM, Treadmill.As values in Table 1 indicate, the combination of optimizing medication, including the additions of empagliflozin and semaglutide, and participation in phase 2 CR resulted in an approximately 35% increase is cardiorespiratory fitness and an 8% decrease in body weight. This case study highlights the potential benefits of initiating treatment in an individual with heart failure without diabetes. The results are important as improved cardiorespiratory fitness and weight loss are both associated with favorable secondary prevention related outcomes.1 It is worth noting that, despite identifying weigh loss as a goal, GC was unsuccessful at achieving any weight loss during the 1st 18 sessions of CR. Unfortunately, the lack of significant weight loss is a fairly typical response and, on average, CR associated weight loss is quite modest. After initiating empagliflozin and semaglutide, however, GC was able to lose nearly 17 lb. 1. Ades PA, Savage PD. The Treatment of Obesity in Cardiac Rehabilitation: A REVIEW AND PRACTICAL RECOMMENDATIONS. *J Cardiopulm Rehabil Prev*. 2021;41(5):295-301.
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