Exercise Training as Treatment of Depression in Heart Failure

We read with interest the thoughtful review by Downing and Balady (1) describing in detail the pathophysiology of exercise impairment in heart failure (HF) and the beneficial role of exercise training in this population. The authors outline the many pathophysiological effects of exercise but fail to include the salutary effects of exercise on behavioral conditions, including depression and depressive symptoms, which are estimated to occur in 24% to 42% of HF patients (2,3). When present, depression and depressive symptoms are associated with poorer survival and greater use of healthcare services, including hospitalization, emergency room visits, and outpatient services. We and others have demonstrated the beneficial effects of exercise in the treatment of depression in the general population, in patients with coronary disease, and in patients with HF, where depressive symptoms were reduced by 40% (2–6). The importance of this high-risk and common comorbidity should not be overlooked when outlining the many benefits of exercise training as treatment.

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REFERENCES


Training Methodology for Transseptal Catheterization Should Incorporate Difficult Anatomic Conditions and the Use of Intracardiac Echocardiographic Imaging

In a recent issue of the Journal, De Ponti et al. (1) reported the results of comparing the transseptal catheterization (TSC) performance of electrophysiology fellows after simulator training (Sim-T) with those undergoing conventional training (Conv-T). The authors found better performance in the fellows who underwent Sim-T. In the Sim-T, the imaging technique was only fluoroscopy.

Fluoroscopy, the traditional imaging technique used for guiding TSC, is guided entirely by the catheter position in cardiac silhouette and does not provide direct soft tissue/structural anatomic imaging. We agree with the need for adequate training of electrophysiology fellows for TSC but feel strongly that all advanced training should incorporate intracardiac echocardiography (ICE) because of the nonroutine anatomic conditions that are commonly encountered.

Many of the “contraindications” for TSC under guidance of fluoroscopy (2,3), including a markedly dilated ascending aorta or other distorted cardiac anatomy as a result of kyphoscoliosis or rotational abnormalities of the heart and great vessels, have been eliminated when TSC is performed under the ICE imaging guidance (4). ICE imaging of the transseptal needle, as it relates to the fossa ovalis and its surrounding structures, makes the TSC expeditious and safe.

In our experience with training electrophysiology fellows using ICE for TSC in left heart ablation in more than 2,000 cases, the difficult conditions for TSC have been much different from those defined previously by fluoroscopy (2,3). Of note, many of the difficult conditions are diagnosed/recognized only with real-time ICE imaging before/during TSC, such as the presence of an interatrial septal aneurysm, especially with a normal left atrial size, a significantly vertical or transverse heart, a longer length of the superior limbus, and abnormal thickness/fibrosis of the interatrial septum. Manipulation of the transseptal puncture needle to the appropriate anatomic location and guiding its entry into the left atrium is greatly enhanced with real-time ICE monitoring even under these difficult anatomic conditions. Certainly, electrophysiology fellows need adequate TSC training, not just for the routine, but also for these difficult anatomic conditions.

Of note, ICE has also proven an effective real-time monitoring tool to enhance early detection of complications, especially pericardial effusion, early sheath thrombus, and damage to the intracardiac structures during TSC.