I read with great interest the study by Davies et al., in which it was reported that the oxygen uptake efficiency slope (OUES) is a determinant of survival in patients with chronic heart failure (CHF). Indeed, the essential point is that it is not clear which parameter ought to be selected to detect the severity of CHF. Responses such as the anaerobic threshold, VE (minute ventilation volume)/VCO₂ slope, oxygen uptake kinetics, rate of recovery of peak oxygen consumption (pVO₂), and OUES have frequently been used to classify functional limitations and stratify risk in patients with heart disease. Although pVO₂ is accepted as a useful measure to stratify the functional reserve of patients undergoing exercise testing, reported that the OUES was as effective as pVO₂ for discriminating between CHF functional classifications and that it was strongly correlated to pVO₂. The usefulness of OUES is that it does not require the maximal effort of the patient, it has been shown to be reproducible, and it reflects the combination of cardiovascular, musculoskeletal, and pulmonary influences that result in inefficient breathing, which are characteristic of CHF disease. However, excessive carbon dioxide production simulates ventilation and leads to lower values of OUES in patients with CHF. OUES should be evaluated and standardized during different exercise protocols and various therapy modalities, which affect carbon dioxide production. Additionally, reported that pVO₂ was a stronger predictor of death or cardiovascular events than OUES or than the VE/VCO₂ slope.

Shortly, it seems to me that neither pVO₂-related nor VE-related parameters correctly present central and peripheral exercise capacity in cardiac patients during submaximal exercise. As a submaximal mathematical parameter, OUES may provide a more beneficial analytic approach to prognosis and progression of CHF.

References


