Case Report: Feasibility of Performing the 6MWT in Ambulatory Patients with Cystic Fibrosis Requiring Mechanical Ventilation Prior to Lung Transplant

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Background & Purpose: The six-minute walk test (6 MWT) is a requirement for lung transplant evaluation by the United Network for Organ Sharing. A subset of patients presenting for lung transplant evaluation require mechanical ventilation (MV) due to respiratory failure. The 6 MWT has not been validated as an outcome measure in patients dependent on MV. Literature supports alternative forms of the 6MWT as valid to accommodate other populations. The purpose of this case series is to describe the feasibility of performing the 6MWT on two patients receiving MV.

Case Description: A 34-year-old and 37-year-old female were admitted to the medical intensive care unit for exacerbations of cystic fibrosis requiring prolonged intubations and subsequent tracheostomy. Their hospital course was characterized by participation in early rehabilitation and variable dependence on MV. Both patients performed a 6MWT for lung transplant workup while dependent on MV.

Outcomes: Both patients performed the 6MWT while using portable MV achieving a distance greater than that for transplant consideration and approximately 50% of reference-based expected distances. Confounding factors include external pacing and use of an oval track.

Discussion: Performing the 6 MWT for these two patients was safe and feasible to perform while mechanically ventilated. Both patients were able to perform the 6MWT with appropriate vital sign response and ambulated distances greater than the 500 foot target for lung transplant consideration. Further research regarding the validity of this outcome is warranted.