

Remote Monitoring in Heart Failure

Troy Leo MD, MHCM, FACC

Vice Chief of Cardiology – Sanger Heart and Vascular Institute

Senior Medical Director, Virtual Health – AtriumHealth

Cardiovascular disease continues to be the largest cause of mortality throughout the world. In particular Heart Failure (HF) continues to be a large contributor to the morbidity and mortality of the population, affecting 60 million people worldwide. In Korea, an estimated 2.2% of the population has heart failure with a steady increase in both men and women over the years. The cost of treating HF also continues to rise, almost doubling since 2002, primarily due to a rising cost of hospitalization. As the population continues to grow and live longer, the impact of heart failure will continue to rise and impact our communities. To combat this rise, we will need novel methods for diagnosing and treating heart failure.

Remote monitoring has been a tool to manage heart failure for over 25 years. However, the COVID-19 pandemic greatly accelerated the use of virtual and remote technology to diagnose and manage the disease, with increased adoption throughout the world. There are a wide range of remote monitoring techniques, including measuring weight, symptoms, lung water, pulmonary artery/left atrial/right ventricular pressures and speech tone as a surrogate for congestion. Also, smart clothing and other wearables continue to surface as tools to record patient data to help understand and manage the disease better. Lastly, AI continues to evolve and is being implemented to predict and manage HF exacerbations. Studies have shown that remote monitoring is an effective tool to improve the management of heart failure. Remote monitoring reduced all-cause mortality by 16%, first heart failure hospitalization by 19% and total heart failure hospitalizations by 15%.

Technology alone will not be sufficient to manage the increasing cost of heart failure. As we continue to increase the amount of data from our patients, we will need to create an infrastructure and clinical pathways that make it easier, not harder, for clinicians to manage the disease. As the disease is heterogeneous, a tailored approach will be needed in order to utilize resources in the most effective manner to decrease the burden to our patients.

Due to the growing prevalence and increasing costs of heart failure, we need to urgently adapt our systems of care to better manage our patients with heart failure and improve the health and survival of our population. Remote monitoring will be a necessary tool to accomplish this. As technology continues to evolve and bring about more tools to combat the disease, we too must evolve our delivery of care to match the needs of our patients and reduce the global burden caused by heart failure.