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Wearable Defibrillator for Preventing Sudden Cardiac Death Post Heart Attack

Lesley Won*

Department of Cardiology, Inha University, Incheon 22212, Korea

Introduction

Sudden Cardiac Death (SCD) remains a significant concern among individuals who have experienced a myocardial infarction (heart attack). Despite advancements in medical care, a subgroup of post-heart attack patients remains at elevated risk of life-threatening arrhythmias that can lead to SCD [1]. Traditional Implantable Cardioverter Defibrillators (ICDs) have been effective in preventing SCD but are invasive and may not be suitable for all patients. In recent years, the development of Wearable Cardioverter Defibrillators (WCDs) has provided a non-invasive alternative for preventing SCD during the vulnerable period following a heart attack. This paper explores the role of WCDs in preventing sudden cardiac death in post-heart attack patients, their benefits, limitations and potential impact on patient outcomes [2]. A few imminent randomized controlled preliminaries showed that ICD implantation in the beginning stage after AMI with decreased LVEF might forestall arrhythmic demise yet all the while doesn't influence all-cause mortality. The ongoing European Society of Cardiology (ESC) rules suggest reexamination of the left ventricular capability 6-12 weeks after AMI when Left Ventricular Ejection Fraction (LVEF ≤ 40%) is available at release. As a result, the decision about whether or not an ICD should be inserted is put off until after the LVEF might recover [3].

Description

The wearable cardioverter defibrillator is a novel device designed to monitor the cardiac rhythm continuously and deliver prompt defibrillation therapy in case of life-threatening arrhythmias. Unlike traditional ICDs, WCDs do not require surgical implantation, making them a temporary yet effective solution during the recovery phase after myocardial infarction. The WCD consists of a lightweight vest with integrated monitoring and defibrillation components [4]. It continuously analyzes the patient's heart rhythm and if a dangerous arrhythmia is detected, the device delivers an electric shock to restore normal rhythm. The use of WCDs post heart attack serves as a bridge between the acute phase of myocardial infarction and the stabilization of the patient's cardiovascular condition. They provide a safeguard against SCD during a time when the risk of arrhythmias is heightened due to the aftermath of the heart attack. This technology offers several advantages, including ease of use, non-invasiveness and the ability to provide protection even for those who might not meet the criteria for a permanent ICD implant [5].

Conclusion

Wearable defibrillators have emerged as a valuable tool in the prevention of sudden cardiac death following a myocardial infarction. Their non-invasive nature, continuous monitoring capabilities and prompt intervention make them a suitable option for individuals at increased risk of arrhythmias during the critical post-heart attack phase. While further research is necessary to determine their long-term effectiveness and impact on patient outcomes, wearable defibrillators present a promising strategy to reduce the risk of sudden cardiac death and enhance the overall safety and well-being of post-heart attack patients. As technology continues to advance, the integration of wearable devices into standard cardiac care protocols could potentially revolutionize the management of arrhythmias and improve survival rates in this vulnerable patient population.

Acknowledgement

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Conflict of Interest

There are no conflicts of interest by author.

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***Address for Correspondence:** Lesley Won, Department of Cardiology, Inha University, Incheon 22212, Korea, E-mail: lwon@yahoo.com*

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