**WEARABLE CARDIOVERTER DEFIBRILLATOR “THE LIFEVEST”:**

**DEVICE DESIGN, LIMITATIONS, AND AREAS OF IMPROVEMENT**

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**Background:** Sudden Cardiac Death (SCD) is a potentially lethal clinical event without immediate defibrillation therapy. Over the past decade, advances have been made in the implantable cardioverter defibrillator (ICD) and wearable cardioverter defibrillators (WCD) to provide therapy in the event of malignant arrhythmias. While sufficient data exists supporting use of WCDs, there is paucity of data on shortcomings of the device and areas of improvement.

**Methods:**Existing literature was reviewed on efficacy and limitations of wearable cardioverter defibrillation therapy.

**Results:**WCDs are highly effective in preventing death. Most of the studies reported 90 day mortality to be less than 5%. Device design plays a major role in device compliance. By improving the design to make it more user friendly, like a lighter version, increased battery life and easiness to wear, compliance with device therapy has increased. It was reported that 10% of patients forgot the instructions to press two buttons simultaneously to stop inappropriate shocks, while others did not receive appropriate shocks as they misplaced electrodes on the chest.

**Conclusions:**WCDs are safe to use and effective in decreasing mortality. However patients who need them will be generally at a higher degree of physical and psychological stress. Improved design further helps compliance. A team based care and education delivery may further improve outcomes. Multidisciplinary team including a cardiologist, a nurse and a psychologist should provide structured education to patients in order to increase compliance, effectiveness and help decrease delivering inappropriate shocks.