

# Comparative study to understand the clinically efficiency of Vigo Smart Heart (VSH) against traditional holter in Indian Arrhythmia patients

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## Abstract

Arrhythmia is an irregular heartbeats which leads to severe heart complications and it is the most common action of Cardio Vascular Diseases. India represents 31% of global deaths and need for accurate diagnosis and monitoring of Arrhythmia has not been addressed. In view, we developed a novel device Vigo Holter (VSH) that is connected to cloud and IoT based platform designed as an easy wearable for the patient. It records continuous ECG and HR to predict the changes in the heart. Compared a Vigo Holter against the traditional holter monitoring in 51 volunteers for 24 hrs with asymptomatic and symptomatic subjects. We evaluated patient compliance, analyzable signal time interval to arrhythmia detection, and diagnostic yield. In total 51 participants we found 46 reports with equivalent result where as the conditions (Second Degree Mobitz Type I block, First Degree AV block, IVCD and SVT episodes) identified by VSH . Importantly, ECG wave quality in reports with differences is same in both recordings and the total diagnostic yield was 39%. Total Noise in Traditional Holter was 1301 minutes whereas in Vigo Holter was 990 minutes. Total Analyzable time in Vigo Holter was 99.3% whereas in Traditional Holter was 90.22%. VSH reports clearly explained that no lead detachments and noise resultant from the wire entanglements leading to low noise and highly analyzable time. We demonstrated that VSH is very much needed and useful for people and doctors to detect arrhythmia with highest accuracy and to avoid physical interaction with the patient during COVID-19

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