150. Diagnostic Value of Wearable Continuous ECG Monitoring Patch, ATP-C120, For New-Onset Atrial Fibrillation in High Risk Patients

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Background: The early detection and accurate diagnosis of arrhythmia are crucial for prevention of stroke. Conventional ECG monitoring devices may be helpful for detection of atrial fibrillation, but they have multiple drawbacks such as short duration of ECG monitoring or need of invasive implantation devices. Several new generations of ECG monitoring devices have been developed to compensate conventional ECG devices' weaknesses. Among these devices, we used a patch-type device, ATP-C120 to test its diagnostic capability in early detection of atrial fibrillation in high risk patient groups.

Aim: We designed to investigate (1) the rate of new-onset atrial fibrillation detected by ATP-C120 in high risk patient group, (2) its comparison over the rate of new-onset atrial fibrillation diagnosed during conventional outpatient clinic visit with 12 lead ECG, and lastly (3) the incidence of death, stroke, myocardial infarction, or systemic embolism in new-onset atrial fibrillation diagnosed group.

Methods: This study is a non-randomized, multi-center, prospective cohort study. We are planning to enroll 320 adults aged 19 years or older who are as follows: (1) patients who provide written and informed consent to participate; and (2) whose calculated CHA2DS2-VASc score is ≥ 2. Individuals will be attached with a patch-type device, ATP-C120 for 11 days and will be analyzed for record of new-onset atrial fibrillation. If atrial fibrillation is not detected by the ATP-C120 device, subjects will be scheduled to visit on 90th day and 180th day for basic clinical assessment.

Results: One hundred and thirty participants have been enrolled in this study. The mean age was 73.7 ± 7.7, and the average of CHA2DS2-VASc score was 3.6 ± 1.2. Among the population, 6 participants were diagnosed as paroxysmal atrial fibrillation (4.6%), and one participant presented an episode of atrial flutter (0.8%). 18.5% of the participants showed paroxysmal atrial tachycardia, and 8.5% of participants presented non-sustained ventricular tachycardia (NSVT). Furthermore, when we analyzed participants with atrial fibrillation, there were no significant differences in baseline characteristics.

Discussion: This study is designed to demonstrate the diagnostic validation of ATP-C120 device by the detection of new-onset atrial fibrillation in high risk patients. The prolongation of ECG monitoring is proven to increases the detection rate of paroxysmal atrial fibrillation, and therefore, we predict the higher diagnostic yield by this new patch-type device. If this study proves that ATP-C120 comes out to be superior in diagnosis of new-onset atrial fibrillation compared to the conventional ECG monitoring devices, it can be crucial in early detection of atrial fibrillation and improves to prevent ischemia strokes. Due to its conveniency and comfortability compared to conventional devices, it will be largely used in real-world. As a result, it may elicit patients' participations and promote overall good health in connection

Clinical Implications: we believe that this paper will be of interest to the audience because to be effective in prevention, physicians need to provide a convenient test to improve patients' compliance, and this study highlights the fact that a longer duration of cardiac monitoring will allow for a more accurate measurement of atrial fibrillation burden, and may contribute to lowering the stroke rate.