

Detection of Atrial Fibrillation Using a Modified Microlife Blood Pressure Monitor

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BACKGROUND

Hypertension is a major risk factor for the development of atrial fibrillation (AF) and for stroke due to AF. Asymptomatic AF can result in a stroke, in patients with risk factors, if it is not detected and treated appropriately. This study evaluated the sensitivity and specificity of an automatic oscillometric sphygmomanometer designed to detect AF.

METHODS

The sphygmomanometer incorporates an algorithm for detecting AF while reducing false positive readings due to premature beats. A total of 405 unselected outpatients seen in two cardiology offices were evaluated by taking three sequential device readings and one electrocardiogram (EKG) on each patient.

RESULTS

For detecting AF, the sensitivity was 95% and the specificity 86% with a positive predictive value of 68% and a negative predictive value of 98% for single device readings. For the three sequential device readings grouped together, the sensitivity was 97% and the specificity was 89%. The device correctly categorized most of the non-AF, abnormal rhythms. The specificity for those in sinus rhythm was 97%.

CONCLUSIONS

This device is able to detect AF with high sensitivity and specificity. Use of this device by patients who monitor their blood pressure at home may help detect asymptomatic AF and allow for treatment prior to the development of a stroke.

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