Clinical evaluation of the Welch Allyn SureBP algorithm for automated blood pressure measurement

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Abstract

Objectives: To clinically evaluate an inflation-based algorithm incorporated into a new automated blood pressure monitor manufactured by Welch Allyn, Inc.

Methods: Device evaluation was performed according to the Association for the Advancement of Medical Instrumentation standard. An overabundance of patients with hypertension (32) were part of the 110 total participants. The data were also analyzed as described in the British Hypertension Society protocol.

Results: The mean error and standard deviation for systolic blood pressure were -0.9 mmHg±7.2; for diastolic blood pressure -2.2 mmHg±6.7. These passed the Association for the Advancement of Medical Instrumentation standard requirements. By British Hypertension Society data analysis, the device achieved an AA grading. Over 90% of the cycles' blood pressure values were obtained during inflation.

Conclusions: The SureBP inflation-based algorithm successfully passed the Association for the Advancement of Medical Instrumentation standard requirements and achieved an AA rating by British Hypertension Society data analysis. The monitor has great advantages for patient comfort and speed of readings (average 15 s per reading). As the population studied was skewed by including a much larger than needed number of patients with hypertension, clinicians can have added confidence in this new technology.

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