BACKGROUND: Electronic blood pressure monitoring devices are widely used by patients for monitoring their blood pressure at home. Few of them, however, have been validated against recognized protocols and proved to be accurate. OBJECTIVE: This study aimed at verifying whether the automatic electronic oscillometric blood pressure measuring device, Artsana CS 410 (Artsana S.p.A., Grandate, Como, Italy), complied with the standard of accuracy indicated by the European Society of Hypertension (ESH) International Protocol. METHODS: Sequential measurements of systolic and diastolic blood pressure were obtained in 33 patients (13 males, 20 females, mean age +/- SD 49 +/- 12 years) using the mercury sphygmomanometer (two observers) and the test device (one supervisor). A standard adult cuff was always used during the study. According to the ESH validation protocol, 99 pairs of test device and reference blood pressure measurements were obtained during the two phases of the study (three pairs of measurements for each of the 33 patients). RESULTS: The Artsana CS 410 device successfully passed phase 1 of study validation with the number of absolute differences between test and reference device never <35 within 5 mmHg, never <40 within 10 mmHg and never <42 within 15 mmHg. The test device also passed phase 2 of the validation study with a mean (+/-SD) device-observer difference of -0.9 +/- 5.9 mmHg for systolic and -1.0 +/- 3.1 mmHg for diastolic blood pressure. CONCLUSION: According to the results of the validation study, based on the ESH International Protocol, the Artsana CS 410 may be recommended for clinical use in adults.