measurements were performed in a random order using a mercury sphygmomanometer by two of the investigators (KK, AK). The mean of two measurements in the sitting position was used.

The systolic blood pressure of the patients was 129.4 (SD 20.8) mmHg by using the diaphragm side and 129.5 (21.7) mmHg by using the bell side of the stethoscope (p=0.78). By amplifying the high frequency sounds it was 131.0 (22.2) mmHg and by amplifying low frequency sounds 130.7 (22.5) (p=0.46). Systolic pressure measured by the electronic stethoscope was significantly higher than systolic pressure measured by the ordinary acoustic stethoscope (p=0.0001–0.008). The corresponding diastolic blood pressure values were 77.1 (12.0), 77.0 (12.0), 77.2 (12.3) and 76.4 (12.3) mmHg.

Diastolic blood pressure measured by the electronic stethoscope by using low frequency amplification was lower compared to both high frequency amplification (p=0.005), diaphragm (p=0.01) or bell side (p=0.04) of the acoustic stethoscope.

Blood pressure can be measured reliably by using either the bell or the diaphragm side of the ordinary acoustic stethoscope. Electronic amplification of Korotkoff sounds results in slightly higher systolic blood pressure values whereas low frequency electronic amplification results to slightly lower diastolic blood pressure values. In everyday practice that difference has little clinical significance but should be taken into account in scientific research of large populations.

Key Words: Measurement of Hypertension, Stethoscope, Electronic Stethoscope

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A LARGE-SCALE AMBULATORY BLOOD PRESSURE MONITORING (ABPM) TRIAL IN THE PRACTICE SETTING: EFFICACY OF THE ANGIOTENSIN RECEPTOR BLOCKER, TELMISARTAN

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Both ABPM and office measurements were used by 518 practicing clinicians to assess the antihypertensive efficacy of telmisartan in 1,628 patients, 940 untreated and 675 previously on other drugs. After baseline ABPM, patients were started on (or switched to) telmisartan 40 mg qd, which was increased to 80 mg qd (unless patients were hypotensive) after 2 weeks; if office BP was >140/85 mmHg after 4 further weeks, telmisartan 80 mg/hydrochlorothiazide 12.5 mg was given for a final 4 weeks. ABPM was performed at completion of treatment using an intention-to-treat analysis. Of the 1,628 patients, 1,557 (95%) successfully completed both ABPM procedures. Baseline BP by 24 h ABPM was 135/77 mmHg, and it fell by 10.7/6.5 mmHg with telmisartan or telmisartan-HCT (12.5/8.0 mmHg in previously untreated patients, 8.1/6.0 mmHg was 135/77 mmHg, and it fell by 10.7/6.5 mmHg with telmisartan or

Key Words: Ambulatory Blood Pressure Monitoring, Angiotensin Receptor Blocker, Hypertension

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COMPARISON OF THE OMRON HEM-637 WRIST MONITOR TO THE AUSCULTATION METHOD WITH THE WRIST POSITION SENSOR ON OR DISABLED

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Purpose: To determine if the Omron HEM637 wrist model with the wrist positioning sensor turned on (Son) is more accurate relative to upper arm auscultation by trained professions than when the sensor was manually turned off (Soff).

Method: Forty-four subjects, at least 30 years old, had repeated, sequential dual-observer upper arm auscultatory measurements (5–6 each) and oscillometric Omron HEM637 wrist measurements (4 each). Nineteen subjects were assigned to the wrist sensor On group and 25 were assigned to the wrist sensor Off group. A total of 425 auscultatory and 164 wrist measurements were analyzed.

Result: The Omron HEM-637 measured the BP with equal accuracy to the observers using the auscultatory technique (difference –1.37±8.51 / 3.47±8.07mmHg, p=0.71/0.14). The wrist sensor did improve the accuracy of the measurements compared to the subjects that had the sensor deactivated. The sensor On group (Son) measured the SBP (–2.32±5.59 mmHg) and DBP (–2.56±5.36mmHg) statistically the same as by auscultation (p=0.60 for SBP and p=0.44 for DBP). The sensor Off (Soff) group measured the SBP (–3.03±7.12 mmHg) and DBP (–5.56±6.68mmHg) statistically different than auscultation (p=0.46 for SBP and p=0.02 for DBP). The higher (negative) measurement for both the SBP and DBP suggests that the average position of the wrist was 1.75 inches (4.4cm) below the heart level in this group with the sensor off.

Conclusion: This study demonstrated that the Omron HEM-637 monitor with a wrist sensor more accurately measured blood pressure compared to the same model with the sensor turned off, which was statistically different for DBP.

Key Words: Wrist Blood Pressure Measurement, Accuracy of Measurement, Blood Pressure Determination

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BLOOD PRESSURE MEASUREMENTS IN A COMMUNITY PHARMACY COMPARED TO HOME BLOOD PRESSURES

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Clinic blood pressure (CBP) measurement has been the standard for diagnosis and treatment of hypertension. Limitations of CBP such as observer bias, white coat and placebo effects have been identified. In recognition of these limitations, some physicians suggest that patients obtain BP readings outside of their office. The objective of this study is to compare home blood pressure (HBP) measurements with pharmacy