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**Three-hour ambulatory blood pressure monitoring: a new surrogate for ambulatory blood pressure assessment in the Pakistani population**

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**On behalf:** PC BP (Post Clinic Blood Pressure) Study Group

**Topic(s):**
Blood Pressure Measurement

**Citation:**

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**Background:**

The gold standard Ambulatory Blood Pressure Monitoring (ABPM) eliminates white coat effect. However, it is expensive and 24 hours long, making it cumbersome. Prior studies in other populations have investigated the utility of shorter intervals in which ABPM can be used to get the same results as 24-hour ABPM.

**Purpose:**

Our objective was to determine if 3-hour ABPM correlates with 24-hour ABPM in the Pakistani population.

**Methods:**

A cross-sectional study, involving 150 participants as part of the PC ABP (post clinic ambulatory blood pressure) study, was conducted in the cardiology clinics, starting 2015. Participants ≥18 years of age and were either hypertensive or referred for assessment of hypertension were included. Pregnant females were excluded. Blood pressure (BP) readings were taken with an ambulatory BP monitor over a 24 hour period, every half hour during daytime and every hour during nighttime. After excluding the first hour called the white-coat window, the mean of the first 6 systolic readings taken every half hour during the daytime was calculated and was called systolic 3-hour ABPM. Pearson correlation coefficients were calculated and Bland Altman plots were constructed to determine the correlation and limits of agreement between mean systolic 3-hour ABPM and mean daytime ABPM.

**Results:**

Of 150 participants, 49% were male. Of all participants, 76% were hypertensive. Mean age of the participants was 60.3 ± 11.9 years. Mean systolic 3-hour ABPM was 135.0 ± 16mmHg. Mean systolic daytime ABPM was 134.7 ± 15mmHg respectively. Pearson correlation coefficient between mean systolic 3-hour ABPM and mean systolic daytime ABPM was 0.85 (p-value of <0.001). The difference between systolic 3-hour ABPM and systolic daytime ABPM was 0.3mmHg (95% Confidence Interval -1.1 to 1.7mmHg). The limits of agreement were 18mmHg to -17mmHg for systolic 3-hour ABPM and systolic daytime ABPM.

**Conclusion:**

Three-hour ABPM correlates well with 24-hour gold standard ABPM in the Pakistani population. We suggest using this shortened study for the assessment of hypertension where a full ABPM cannot be conducted due to expense or logistic reasons, thus saving time and upfront cost.
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