

## Increased BPV Measured From ABPM

# Improves Prediction of Long-term Functional Outcome Compared to Enhanced Casual BP

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### Introduction

Increased blood pressure variability (BPV) following acute ischaemic stroke (AIS) and transient ischaemic attack (TIA) may be of prognostic significance. In this multi-centre prospective observational study, we investigated its prognostic significance by evaluating the associations of BPV derived from enhanced-casual blood pressure (BP) and 24-hour ambulatory BP monitor (ABPM) with 12-month functional outcome.

### Methods

- Supine BP assessments completed at baseline ( $\leq 48$ hrs) for enhanced-casual BP (Figure 1)
- 24-hour ABPM recordings were also completed (Figure 2);  $\geq 20$  successful readings were needed for an acceptable recording
- BPV defined as standard deviation (SD) and coefficient of variation (CoV)
- Poor functional outcome at 12 months was defined by modified Rankin Scale (mRS) score  $\geq 3$
- Outcome data were analysed using multivariable logistic regression; odds ratio, 95% confidence intervals and p-values were reported



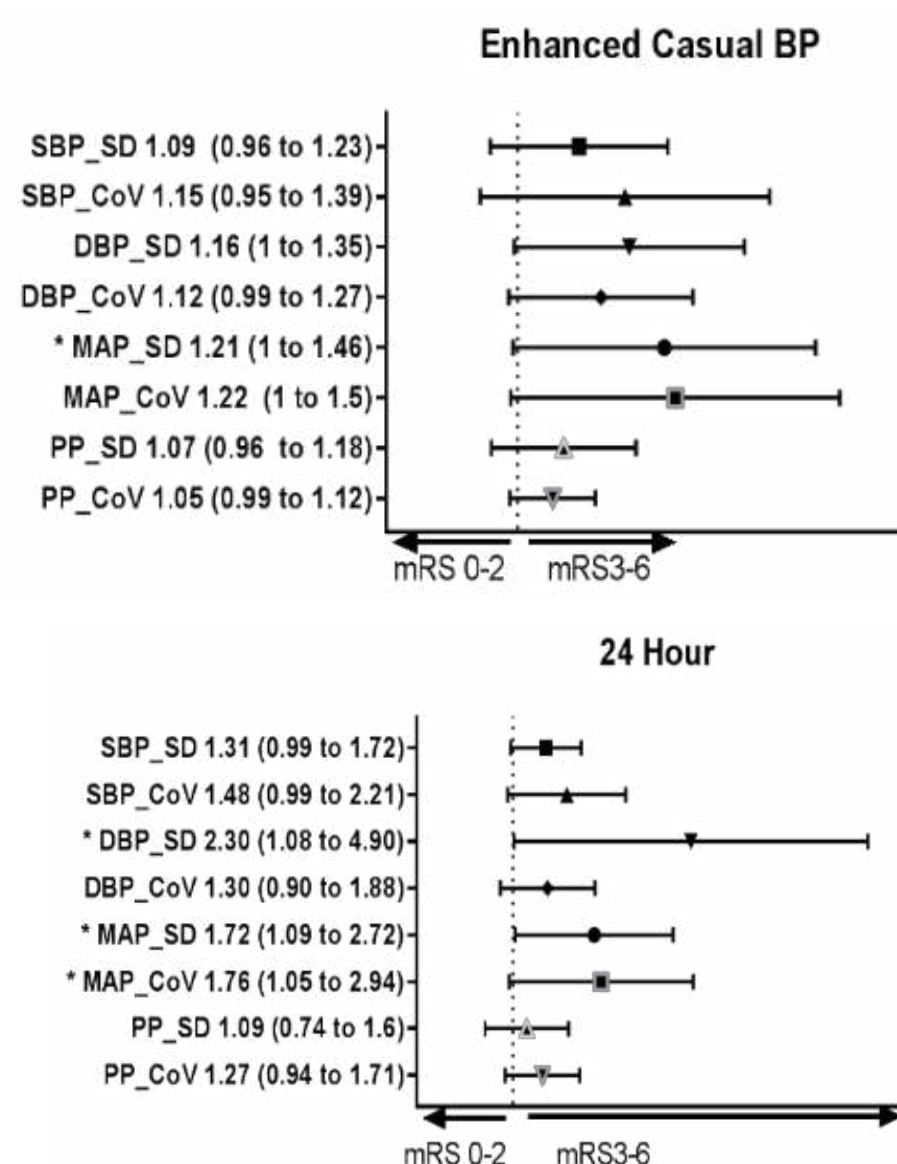
**Figure 1:** Enhanced BP recordings



**Figure 2:** 24-hour ABPM data recording

### Results

At 12 months, 156 participants were independent; dependent (n=36) participants were significantly older [median age 80 vs. 70 yrs,  $p < 0.01$ ], with a higher burden of pre-morbid conditions, pre-morbid and baseline dependency, and stroke severity. More data derived from the ABPM values independently predicted dependency. This was shown for  $SD_{DBP}$ ,  $SD_{MAP}$  and  $CoV_{MAP}$ . However, only increasing enhanced casual  $SD_{MAP}$  independently predicted dependency (Figure 3).



**Figure 3**

Increasing values of 24-hour  $SD_{DBP}$ ,  $SD_{MAP}$  and  $CoV_{MAP}$ , whilst the enhanced-casual  $SD_{MAP}$  independently predicted long-term poor functional outcome

### Conclusion

Increased BPV following AIS and TIA was associated with an increased risk of 12-month dependency; 24-hour ABPM variability showed stronger prognostic value in comparison with those derived from enhanced-casual BP monitoring.