



**Service Priorities and Programmes**  
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**Use of Ambulatory Blood Pressure Monitoring (ABPM) in the primary care: How does it help the clinical management of hypertensive patients?**

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**Introduction**

Hypertension (HT) is one of most common chronic conditions encountered in the primary care. The prevalence of White coat hypertension (WCHT) is 15 to 30% of the general population. On the other hand 20-30% of hypertensive patient might have white coat effect (HTWC) during their clinical visits, the treatment of these conditions would be different from those with poor blood pressure (BP) control. While studies both local and overseas have recommended the use of ABPM in these scenarios to guide clinician on HT management, local studies in the primary care setting on ABPM use is limited.

**Objectives**

The aim of this study is to explore the clinical application of ABPM in HT management in the primary care setting.

**Methodology**

This was a retrospective case descriptive study. All cases that had ABPM done at Yau Ma Tei GOPC from 07/2012 to 06/2013 and had been followed up for at least once afterward were recruited. Those with concomitant diabetes mellitus (DM) or atrial fibrillation (AF), being followed up at SOPD, were dead or had defaulted regular follow up after ABPM were excluded. The ABPM reports were classified into three groups: (1) White coat HT (WCHT) group: defined as presence of HT in clinic setting but not in other settings; (2) HT with white coat effect (HTWC) group: defined as HT patients, on BP control medication, whose clinic BP is  $\geq 140/90$ mmHg but daytime ABPM results being normal ( $< 135/85$ mmHg); (3) HT with poor control (HTPC) group: defined as HT patients, with or without BP control medication, whose daytime ABPM was elevated ( $\geq 135/85$ mmHg). Patients' demographic data including age, gender, smoking status and co-morbidities were retrieved from CMS and analysed by SPSS. Analysis of variance (ANOVA) was used for continuous variable and Chi-square for categorical data.

P<0.05 is considered statistically significant.

### **Result**

Result: Totally 496 patients had ABPM done in the study period and 19 patients were excluded according to the exclusion criteria as above. Among the 477 patients who fulfilled inclusion criteria, 31 patients (6.5%) were found to have WCHT, 303 patients (63.5%) have HTWC and 143 patients (30%) have HTPC. There was no statistical difference in terms of sex and smoking status among three groups. The age of WCHT patients ( $60.8 \pm 7.4$  years) was found to be much younger than those from HTWC group ( $65.1 \pm 10.0$  years) and HTPC group ( $65.6 \pm 11.3$  years) (  $P=0.03$  &  $0.02$  respectively). In addition, patients from WCHT group are much thinner than patients with HTPC (BMI  $23.7 \pm 3.1$  kg/m<sup>2</sup> versus  $25.3 \pm 3.5$  kg/m<sup>2</sup>,  $P=0.02$ ). The renal function of patients in HTPC group ( $77.8 \pm 18.4$  ml/min/1.73m<sup>2</sup>) was worse than HTWC group (eGFR  $82.4 \pm 17.6$  ml/min/1.73m<sup>2</sup>,  $P=0.01$ ). With regards to subsequent clinical management, all WCHT cases (n=31, 100%) were managed by explanation and reassurance without medication. 101 (33.3 %) patients from the HTWC group (n=303) were offered stepped up care including life style modification and medication adjustment, whereas 109 (76%) HTPC patients (n=143) were offered intensified treatment ( $p<0.001$ ). Conclusion: The use of ABPM helps to differentiate white coat hypertension (WCHT), hypertension with white coat effect (HTWC) and hypertension with poor control (HTPC) in the primary care settings and therefore guides clinician in devising more appropriate management plan. Compared with WCHT group, patients from HTPC group were older and heavier. When compared with HTWC group, HTPC group had poorer renal function. Our data supported the wise use of ABPM in the primary care setting to improve HT management.