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HOME BLOOD PRESSURE MONITORING IS BETTER PREDICTOR OF CARDIOVASCULAR OUTCOMES THAN OFFICE BLOOD PRESSURE: A SYSTEMATIC REVIEW AND META-ANALYSISSandra C. Fuchs, MD, PhD^{1,2}, Renato G. B. de Mello, MD, PhD¹, Felipe C. Fuchs, MD, PhD³¹Postgraduate Studies Program in Cardiology, School of Medicine, UFRGS, Porto Alegre, RS, Brazil; ²IATS, HCPA, Porto Alegre, RS, Brazil; ³Division of Cardiology, University Health Network / Mount Sinai Hospital, University of Toronto, ON, Canada.

Background: Blood pressure (BP) has been measured in the physician's office by mercury or aneroid sphygmomanometers. However, home BP monitoring (HBPM) allows getting more readings and provides lower BP levels than office blood pressure (OBP) measurements. When interpreted together with OBP or ambulatory BP monitoring, HBPM permits the detection of the white-coat effect and masked hypertension. Available evidence, albeit rare, indicates the superiority of HBPM vs. OBP to predict cardiovascular (CV) outcomes. However, studies assessed several clinical outcomes and some did not reach statistical power. Therefore, a summary estimate updating previous meta-analyses can be useful.

Objective: To update the evidence of HBPM vs. OBP as predictors of CV outcomes, including articles published from 2012 to 2013.

Methods: We performed a systematic review with meta-analysis to assess the efficacy of HBPM vs. OBP as predictors of all-cause mortality, CV death, and target organ damage. Two reviewers independently performed the literature search in various databases. A meta-analysis with a fixed-effect model was conducted, and the heterogeneity and inconsistency indices were assessed.

Results: The search identified 291 articles, of which 10 were eligible and five articles published in 2012 were included in the meta-analysis. There was no substantial change in the correlation coefficient between left ventricular mass index (LVMI) and HBPM than those coefficients previously detected. HBPM was better correlated with LVMI than OBP as well as proteinuria with HBPM ($r=0.31$) versus OBP ($r=0.19$). Another article showed a 22% increase in the risk of silent cerebrovascular disease per one standard deviation increase of systolic BP measured at home, but the risk for OBP was not significant. A previous meta-analysis summarized data from mostly recent and some older articles, showing the superiority of HBPM over OBP to predict all-cause mortality, CV mortality, and CV events. Another systematic review evaluated target organ damage and left ventricular mass index (LVMI) demonstrating that HBPM was better correlated with LVMI than OBP. Moreover, proteinuria was significantly correlated with HBPM but not with OBP.

Conclusion: The results of our meta-analysis confirm that HBPM is a better predictor of CV outcomes and target organ damage than OBP.