The impact of the degree of obesity on the discrepancies between office and ambulatory blood pressure values in youth

E. Lurbe, C. Invitti, I. Torro, A. Maronati, F. Aguilar, A. Sartorio, J. Redon, G. Parati

Journal of Hypertension 24: 1557-1564, 2006.

Objectives obesity is an increasingly frequent problem among children and adolescents, and may lead to blood pressure (BP) increase. The aim of the present study was to assess the prevalence of hypertension, white-coat and masked hypertension in obese adolescents making systematic use of both office BP and 24-h ambulatory BP measurement. The impact of different degrees of obesity on BP and heart rate variability was also investigated.

Methods office and ambulatory BP were obtained in 285 overweight and obese Caucasian adolescents (11-18 years old) and in 180 age- and sex-matched controls. The extent of obesity was quantified using body mass index *z* score.

Results a significant positive relationship between body mass index *z* score and both office and ambulatory systolic BP was found after adjusting for age and height in both boys and girls. Obese youths had not only higher BP levels, but also BP variability compared with controls. Among obese youths, 20.8% had abnormal BP conditions, 6.6% were white-coat hypertensives, 9.2% were masked hypertensives and 5% were sustained hypertensives.

Conclusions the prevalence of these abnormal BP conditions, which can be identified thanks to ambulatory BP monitoring, further emphasizes the usefulness of this diagnostic tool in obese youth.