

Bhatt GC, Pakhare AP, Gogia P, Jain S, Gupta N, Goel SK and Malik R (2020)
Predictive Model for Ambulatory Hypertension Based on Office
Blood Pressure in Obese Children. Front. Pediatr. 8:232.2020.
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Objectives: To Characterize the ambulatory blood pressure in obese children and to explore the feasibility of office blood pressure to predictive ambulatory hypertension.

Design: Observational Study.

Setting: Outpatient registered children in Pediatric Nephrology & Hypertension clinic of a tertiary care teaching hospital in central India.

Patients: Children 5 - 18 years with BMI \geq 95th Percentile from December 2015 to December 2018.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



PREDICTIVE MODEL FOR AMBULATORY HYPERTENSION

RESULTS:

- 55 Obese children underwent 24 hours ambulatory blood pressure monitoring (ABPM) and Biochemical Investigation.
- Mean age 11 years \pm 2.39 years, Male : Female = 1.8
- Family History of Hypertension - 69%
- Mean salt intake : Male 8.32 \pm 3.5 grams, Female 5.01 \pm 2.6 grams

Ambulatory Blood Pressure Abnormalities

- Elevated Blood pressure 5/55 (9%), Office Hypertension 29/55 (52.7%)
- Ambulatory hypertension 14/55 (25.5%)
- White Coat Hypertension 17/29 (58.6%), Masked Hypertension 2/26 (7.69%)
- For office SBP Percentile the area under curve (AUC) was 0.773 (95% CI: 0.619 - 0.926, p =0.005)
- For office DBP Percentile the AUC was 0.802 (95% CI: 0.638 - 0.966, p =0.002)

Impaired Dipping Status

- Impaired dipping SBP 63.6%, Impaired dipping DBP 50.9% Estimated Cut off for Office blood pressure
- 93rd percentile for systolic BP (Sensitivity - 67% and Specificity - 78%)
- 88th percentile for diastolic BP (Sensitivity - 83% and Specificity - 62%)

Conclusion:

- Ambulatory blood pressure abnormalities are highly prevalent among children with obesity.
- Office BP did not accurately predict ambulatory hypertension.
- Half of the children labeled as "hypertension" on office blood pressure measurement were diagnosed to have white coat hypertension (WCH).
- Study highlights role of ABPM for evaluation of WCH before the child is subjected to detailed investigations or started on pharmacotherapy

EXPERT COMMENT



"There is high prevalence of Ambulatory Hypertension in obese children with a high percentage of them having impaired dipping status, a risk for adverse cardiovascular events. Office blood pressure do not have optimal diagnostic test properties emphasizing the role of ABPM in diagnosis of hypertension in obese children"

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Reference

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