

Assessing Changes in body Mass Index and Blood Pressure Among Morbidly Obese Pediatric Patients Seeking Care at a Tertiary Weight Management Clinic.

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Abstract

INTRODUCTION: According to the most recent national survey data, the Centers for Disease Control reports that childhood obesity has more than tripled in the past three decades with more than a third of children and adolescents being overweight or obese. Increasing childhood obesity rates call attention to increasing cardiovascular risk, as higher body mass index (BMI) has been associated with elevated blood pressure (BP). The Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents recently established the category of “prehypertension” for the early identification and intervention of high blood pressure. The rate of progression from prehypertension (BP percentile 90th-95th) to hypertension (>95th) among children occurs at approximately 7-10% per year. If preventive measures are implemented to modify blood pressure in children, this may limit the progression to hypertension and cardiovascular disease. Yet, few effective interventions exist to improve dietary and physical activity habits. The purpose of this study was to evaluate the clinical outcomes of morbidly obese pediatric patients seeking care at the UCLA Fit for Healthy Weight Program. **METHODOLOGY:** A retrospective medical chart review was conducted of 115 patients enrolled in the UCLA Fit for Healthy Weight Program. Eligible subjects were overweight or obese boys and girls, 3 to 22 years of age, enrolled in the clinic. BMI and BP values were evaluated using national data from the CDC and the National Heart, Lung, and Blood Institute Task Force on Blood Pressure Control in Children. **RESULTS:** Demographic characteristics included near equal distribution of males and females. A total of 35 patients completed the average duration of three clinic visits to the UCLA Fit for Healthy Weight Program. At baseline, 26% of patients had elevated BP, and 100% had BMI values at or above the 95th percentile (obese). After three clinic visits, there was a significant improvement ($p < 0.05$) in BP across all patients. 82% of patients in the elevated BP category moved into the normotensive range. Three patients saw a reduction in BMI into the 85th-95th overweight percentile range. **CONCLUSION:** Reducing BMI and BP are positive clinical outcomes in the reduction of cardiovascular risk. Patients in the prehypertensive BP range have the

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most to benefit as noted in the literature with respect to reversing the progression to hypertension and cardiovascular disease. This study saw a significant clinical outcome as BP decreased among this cohort of morbidly obese pediatric patients, despite elevated BMI in the 95th percentile and above range. This study demonstrates that a modest decrease in BMI in an ongoing clinical pediatric weight management program can be accompanied by significant improvements in related health measures such as blood pressure.

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