P3-286 Alterations in ambulatory blood pressure in adolescents with obesity.

Diaz-Escobar Laura[1], Lopez Gonzalez Desirée[1], Garibay-Nieto Nayely[2], Villanueva-Ortega Erendira[2], Hernadez Ana Maria[3], Medeiros Mara[3].

1. Epidemiology Research Unit, Hospital Infantil de México Federico Gómez. 2. Pediatric Obesity Clinic, Hospital General de Mexico, 3. Nefrology, Bone and Metabolism Research Unit, Hospital Infantil de México Federico Gómez.

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INTRODUCTION.

Obesity is associated with comorbidities such as hypertension (HTN), and other alterations in blood pressure (BP) such as: masked hypertension and alterations in the circadian cycle variability, that only can be detect through ambulatory blood pressure monitoring (ABPM).

A higher prevalence of masked hypertension has been reported in obese subjects, up to 4.3%. Also a loss in drop from mean daytime to mean night-time levels in up to 50%, conditions that only can be detected by ABPM.

OBJECTIVE.

Identify the alterations in ambulatory blood pressure in Mexican obese adolescents.

Evaluate the correlation in blood pressure measurement between ABPM and casual blood pressure.

METHODS.

This was a cross-sectional study of adolescents aged 12-17.9 years recruited at their first visit to any of two participating Childhood Obesity Clinics in Mexico City. We carried a medical and nutritional evaluation, anthropometry, biochemistry analysis (fasting glucose, lipid profile, insulin and renal function) and measurement of casual BP by osillometric. After that, the monitor was placed in the subjects for 24 hours ABMP records.

RESULTS.

Thirty subjects were measured, of which 66% are women, with BMI values between 26.5 and 35.14 kg/m2; with a median age of 15 years. Shown in Table 1.

The biochemical results were reported as median, glomerular filtration rate 101.31mlmin1.73, glucose 83mg/dl, total cholesterol 145mg/dl, triglycerides 107mg/dl, and uric acid 6.1mg / dl. 37% had hypertriglyceridemia, 7% hypercholesterolemia and 97% had central obesity.

The frequency of ABPM alterations were: 22% of men and 21% of women had systolic HTN of 24hrs; 11% of men and 26% of women had diastolic HTN of 24hrs; 22% of men and 21% of women with systolic-day HTN, 11% of men and 16% of women with diastolic-day HTN; while for systolic-nocturnal HTN, 33% of men and 32% of women presented it. Diastolic-night HTN in men was 44% and 53% in women. The most frequent alteration was nocturnal diastolic HTN. Plot 1

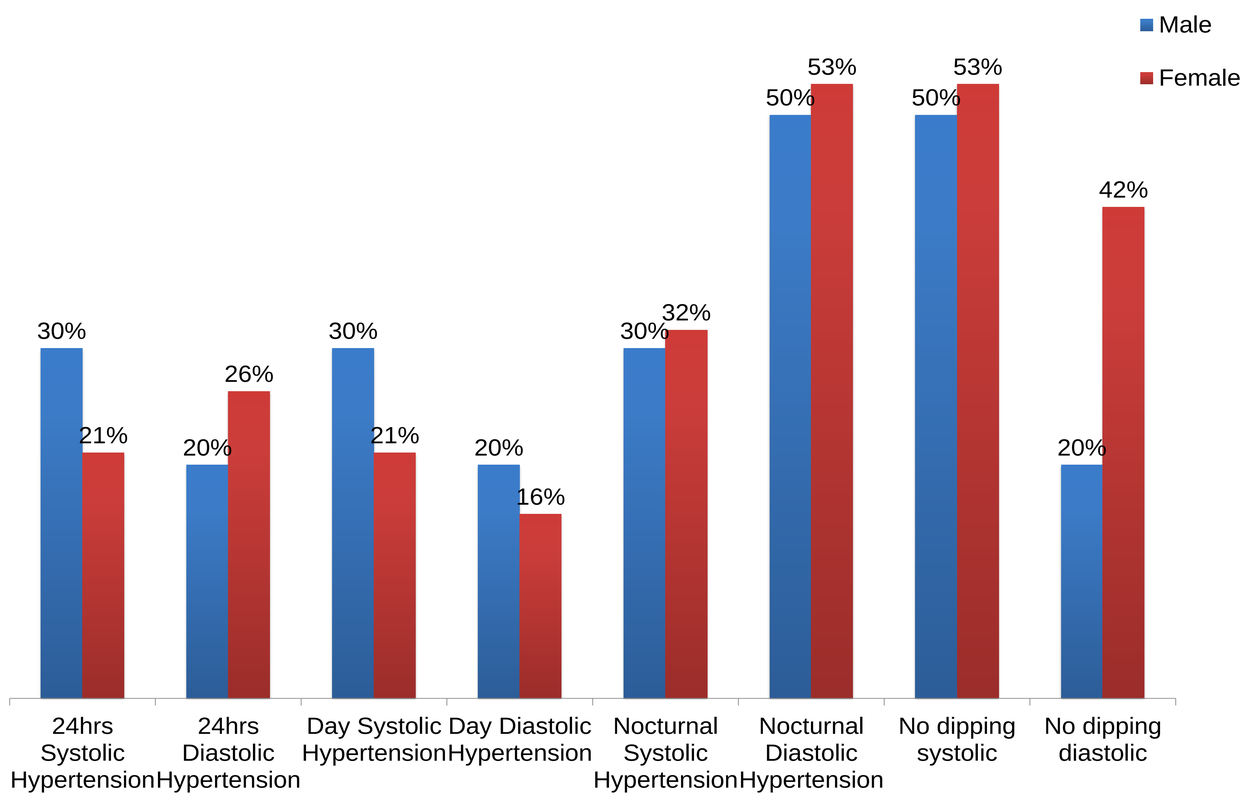
The no dipping in BP was present in 50% of the subjects, with systolic predominance; the diastolic was in 33% of the subjects.

The main alterations of the TA were documented during the night. One patient presented the seven alterations of ABPM. Loads greater than 50% were observed in 13 patients (43%) that imply severe ambulatory HTN.

Table 1. General characteristics of the sample.

		Male n=10 (33.3%)			Female n=20		
		Median	Min	Max	Median	Min	Max
Age (years)		15.2	11.1	17.6	15.6	12.4	17.5
Weight (kg)		82.3	61.7	93.6	77.8	65.1	108.1
Height (cm)		167.3	151.5	171.4	157.5	148.9	175.4
BMI (kg/m2)		29.0	26.5	35.0	30.8	27.2	35.1
BMI (percentil)		98	95	99	98	96	99
Waist to height index		0.57	0.51	0.67	0.6	0.51	0.75
Tanner sexual maduration stage n (%)	2	3	30%		3	30%	
	3	3	30%		3	30%	
	4	3	30%		3	30%	
	5	1	10%		1	10%	
SBP casual (mmHg)		118	98	132	108	96	124
DBP casual (mmHg)		71	62	79	70	60	80
Glucose (mg/dl)		83	76	93	83	71	92
Total Cholesterol		172	119	208	143	84	201
Triglycerides (mg/dl)		121	54	407	95	49	209
Uric Acid (mg/dl)		7.8	5.9	10.3	5.5	3.2	7.9
GFR (ml/mn/1.73m2)		92.64	75.93	166	101	83.64	156

Plot 1. Type of alteration of ambulatory blood pressure monitoring.



Plot 2. Type of alteration of casual Blood Pressure.

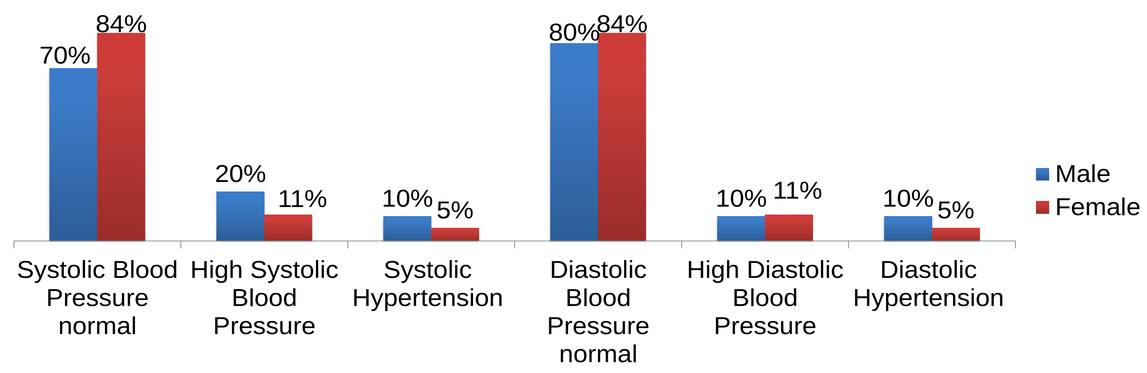
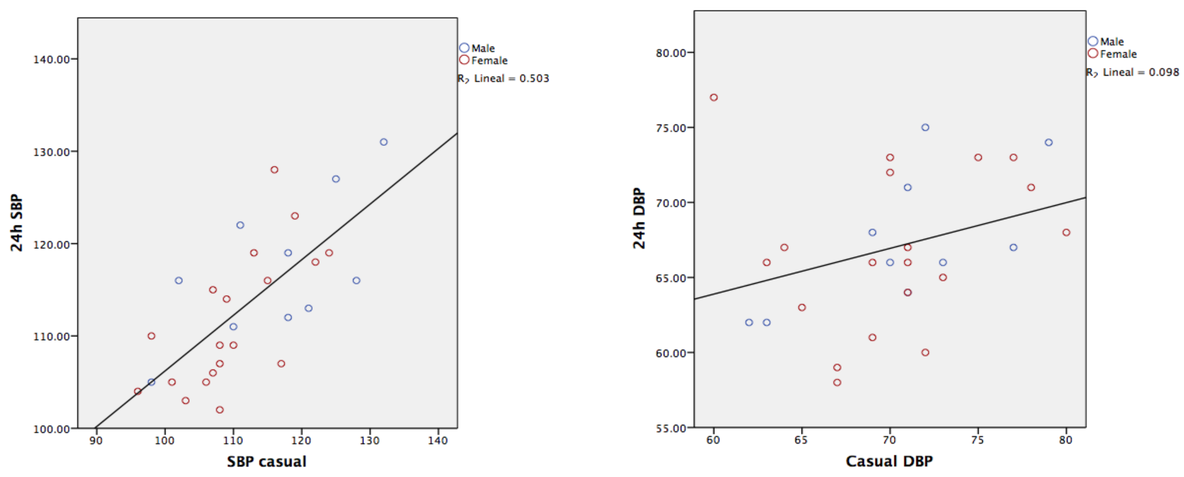


Table 2. Correlation between casual BP and ABPM.

Casual Systolic blood pressure Rho Sperman	24hrs SBP .725**	SBP at day .674**	Nocturnal SBP .598**
Casual Diastolic blood pressure Rho Sperman	24hrs DBP .548**	DBP at day .611**	Nocturnal DBP 0.166

** p value <0.01 (bilateral).
* p value < 0.05 (bilateral).

Plot 3 and 4. Linear correlation between casual BP with ABPN at 24hrs.



CONCLUSIONS.

The 70% of adolescents with obesity presented some alteration in ABPM, with a predominance of nocturnal HTN and the absence of dipping.
It is important to consider measure ABPM as part of the assessment of adolescents with obesity, as well as to evaluate the comorbidities related to this alteration, such as hypertrophy of the left ventricle.

Acknowledgments.

To their participants and their families.