VASCULAR ABNORMALITIES RELATED WITH OBESITY

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BACKGROUND

Obesity is linked to a higher prevalence of risk factors, metabolic and inflamatory pathways conducting to increased vascular disease and CV risk.

OBJECTIVE

To assess vascular disarrangements using non invasive methods in obese subjects (O) compared with matched lean (L) controls.

METHODS

From the database of our Non Invasive Vascular Lab with 3964 first evaluated patients, we performed a case control study with 363 sujects, 268 obese and 95 lean, age and sex matched controls.

We measured IMT, Plaque analysis, PWV, Endothelial Function (EF) and arterial stiffness (CAP and Aix) (AS) using an oscillometric device (Arteriograph, Tensiomed. Hungary)

BASELINE PARAMETERS AND CV RISK FACTORS   N= 3964

PARAMETER	LEAN N 95	OBESE N 268	P VALUE
AGE	43,5 ± 11	42,5 ± 5	0,22
MALES (%)	74 (78)	216 (80,6)	0,57
BMI (kg/m2)	25 ± 1,1	33,5 ± 3,3	< 0,001
WAIST (cm)	91,2 ± 6,1	110,4 ± 7,5	< 0,001
SBP (mmHg)	119,1 ± 8,8	139,8 ± 16,8	< 0,001
DBP (mmHg)	74,3 ± 8	88,8 ± 39	< 0,001
PP PERIF (mmHg)	44,7 ± 6,7	50,7 ± 41	< 0,001
HR (BEAT /min)	61,2 ± 9,5	70 ± 11,7	< 0,001
CARDIOVAS TREAT	0	99 (36.9)	< 0,001
HTN	0	184 (68,6)	< 0,001
DLP	0	160 (59,7)	< 0,001
SMKNG	0	65 (24,2)	< 0,001
DBT	0	21 (7,8)	< 0,001
SED	41 (43)	194 (72,4)	< 0,001

VASCULAR PARAMETERS MEANS AND ABNORMAL RESULTS (%)

PARAMETER	LEAN N 95	OBESE N 193	P VALUE
PERI PP (mmHg)	44,7 ± 6,7	53,4 ± 10,5	<0,001
Ao PP (mmHg)	38,1± 6,9	46,2 ± 12,9	<0,001
PERI Aix (%)	-29,8 ± 28,6	-27,3 ± 28,5	0,48
Ao AIX (%)	19,4 ± 11,5	21 ± 12,4	0,29
IMT LCC (mm)	0,60± 0,12	0,67 ± 0,13	<0,001
IMT RCC (mm)	0,55 ± 0,01	0,55 ± 0,08	0,5
ATHE BURDEN (mm2)	32,7 ± 28,4	30,5 ± 25,5	0,5
ENDOT FUN (%)	7,5 ± 5	7,4 ± 6,4	0,5
PWV (m/seg)	7,5 ± 1,5	8,8 ± 2	<0,001
% ABNORM IMT	24 (25,3)	127 (65,8)	<0,001
PLAQUES + (%)	37 (38,9)	146 (75,6)	<0,001
% ABNORM END	32 (33,7)	111 (57,5)	<0,001
% ABNORM PWV	17 (17,9)	80 (41.4)	<0,001
FRAMINGHAM RS	4,1 ± 2,3	5,5 ± 3,1	<0,001
VASC SCORE	1,5 ± 1,2	2,3 ± 1,2	<0,001

RESULTS

Age(O 42.5±5; L 43.5±11) and sex %(O 80.6%;L 78%) were similar.

BMI (O 33.5±3.3 L 25±1.1Kg/m2), waist (O110.4±7.5; L 91.2±6.1cm) and BP (SBP O 139.8±16.8; L119±8.8 and DBP O 89±3.9; L 74.3±8 mmHg) were higher in O (p<0.001).CV Risk Factors in O: HTN 68% DLP 59.7% SMKG 24.2% DBT2 7.8% SED 72.4%.

The % of abnormalities in IMT (O/L : 65.8/25.3%), Plaques (75.6/38.9%), EF (57.5/33.7%)and PWV (41.4/17.9%) were higher in O (p<0.001).

Central and Peripheral PP were higher in O but not Aix.

CONCLUSION

Obese patients present a higher prevalence of vascular disarrangements either structural or functional, explaining the role of this condition as a CV risk factor.