Low birth weight is not associated with increased risk of metabolic syndrome in obese children and adolescents.

Inzaghi E[1], Fintini D[2], Baldini-Ferroli B[1], Grossi A[2], Pedicelli S[1], Bizzarri C[2], Fiori R[1], Spadoni G[1], Scirè G[1], Cappa M[1,2], and Cianfarani S[1,2,3]

[1] D.P.U.O. "Bambino Gesù" Children's Hospital, "Tor vergata" University, Rome, Italy; 2 Endocrinology and Diabetology Unit "Bambino Gesù" Children's Hospital, Rome, Italy; 3 Department of Women's and Children's Health, Karolinska Institute, Stockholm, Sweden.

Background

Children born small for gestational age (SGA) are at risk for Metabolic Syndrome (MetS) as adults and show a higher prevalence of MetS components.

Objective: To define the association between low birth weight and the presence of MetS in a cohort of obese Italian children and adolescents.

Methods

The presence of MetS was studied in a cohort of obese (BMI >90th centile) children and adolescents consisting of 281 obese subjects with birth weight > 2500 grams (130F/151M, mean age 12.8 ± 1.9, group 1), 25 obese subjects with birth weight ≤ 2500 grams (12F/13M, mean age 12.5 ± 1.9, group 2) and 22 obese SGA children (8F/14M, mean age 12.8 ± 2.4, group 3) defined as having birth weight and/or length < - 2 SDS. MetS was defined according to IDF criteria. Chi-square test was used to establish the relationship between birth weight and MetS and odds ratios were calculated.

	BW>2500 g	BW ≤2500 g	SGA
N	281	25	22
F/M	130/151	12/13	8/14
Age (yrs)	12.8 ± 1.9	12.5 ± 1.9	12.8 ± 2.4
BW (g)	3430 ± 515	2030 ± 468	2400 ± 646
BMI SD	3 ± 0.9	3 ± 0.7	3 ± 0.7
WC (cm)	98 ± 12.3	96 ± 8.1	98 ± 9.3
PAS (mmHg)	123 ± 12.4	116 ± 12.7	120 ± 15.2
PAD (mmHg)	67 ± 10	67 ± 13.1	65 ± 9.8
Glucose (mg/dL)	84 ± 8.5	84 ± 8.9	82 ± 6.5
Triglycerides (mg/dL)	100 ± 54.2	114 ± 86.9	135 ± 89.1
HDL (mg/dL)	46 ± 10	49 ± 11.9	48 ± 11.6

Table 1. Features of obese children and adolescents, subdivided on the base of birth weight characteristics.

Results

MetS was present in 41 subjects (14.6%) of group 1, in 4 subjects (16%) of group 2 and in 4 SGA patients (18.2%). No significant differences in MetS prevalence were found between groups. Compared to normal birth weight, neither a birth weight ≤ 2500 grams (odds ratio 1.1; 95% CI: 0.3-3.4) nor SGA status (odds ratio 1.3; 95% CI: 0.4-4) were significantly associated with increased risk of MetS.

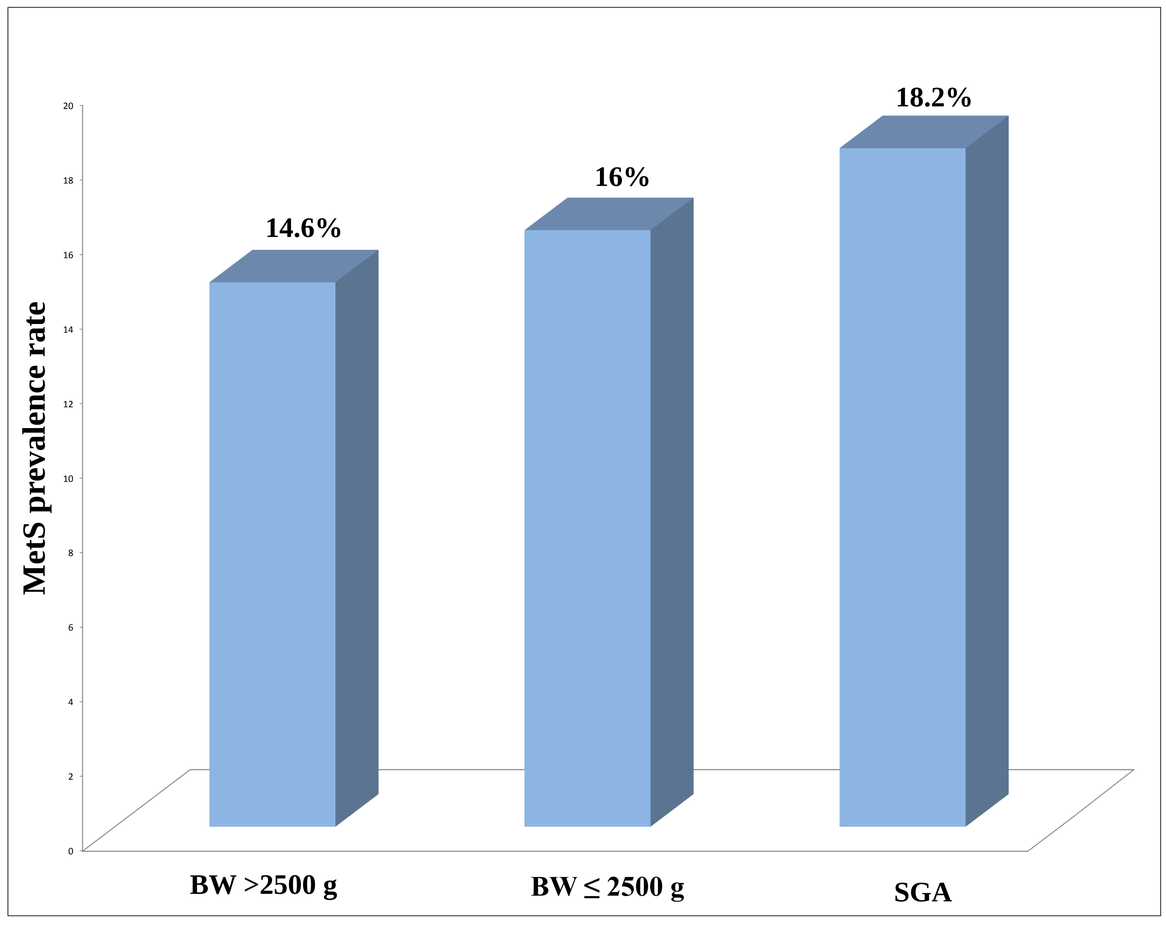

Figure 1 . Metabolic Syndrome (MetS) prevalence rate in children and adolescents with birth weight (BW) >2500 grams, BW ≤ 2500 grams, and SGA subjects.

Conclusions

Low birth weight is not associated with increased risk of MetS in obese children and adolescents. Therefore, routine evaluation of metabolic parameters is not justified in children and adolescents born SGA.

55ESPE 513--P2

Fat metabolism and Obesity

elena inzaghi

DOI: 10.3252/pso.eu.55ESPE.2016

Poster presented at: ESPE 2016 PARIS 10-13 SEPTEMBER