METABOLIC SYNDROME AND BIRTH ANTHROPOMETRIC DATA IN PRADER-WILLI SYNDROME.


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INTRODUCTION

Previous studies showed that non-obese children and adults with Prader-Willi syndrome (PWS) have a low frequency of metabolic syndrome (MetS), while obese ones have a frequency similar to that of non-PWS obese. It is known that individuals born small for gestational age (SGA) have a greater predisposition to the development of MetS. Recent neonatal percentiles of subjects with PWS (Salvato et al., Am J Med Genet Part A. 2019) documented a defect in weight of half kg and in length of 1 cm compared to general population. Moreover, females with a 15q11-13 deletion (DEL15) resulted shorter than those with material uniparental disomy of chromosome 15 (mUPD15).

AIM

To establish whether PWS SGA subjects, defined on the basis of neonatal PWS’s percentiles, have a greater risk of developing MetS.

METHOD

We evaluated the presence of the components of the MetS in 91 PWS subjects (32 males), aged 27.6 (±3.3) years, with a BMI of 37.6 (16.8); 69 (76%), 28 males) had DEL15 and 22 (24%), 4 males) mUPD15. The patients were divided into two groups according their birth weight SDS (BW-SDS): SGA (BW-SDS <1.5; n=17), appropriate for gestational age (AGA) (BW-SDS >-0.682 / +1.5; n=74). In accordance with the literature (Alberti et al., Circulation. 2009; 120: 1640-5), we defined subjects with MetS as having three abnormal findings out of the following five parameters: central obesity, high systolic BP and/or diastolic BP, high triglycerides, low HDL-C and raised fasting plasma glucose. We reported median (IGR) of continuous variables. Statistical analysis was performed by chi square and Mann-Whitney test.

CONCLUSIONS

Birth weight does not seem to significantly affect the frequency of obesity and MetS in young adults with PWS. Obese females with DEL15, who typically have a shorter birth length than mUPD15, appear to have a lower risk of developing MetS. These data would suggest a direct correlation between length at birth and metabolic risk.

META DATA IN PRADER-WILLI SYNDROME.


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RESULTS

On overall SGA and AGA groups showed similar BMI, weight, length and MetF frequency (40%). The prevalence of MetS in SGA-born obese subjects (7/17; 41%) was similar to that of AGA-born obese (28/74; 38%). Obese girls with DEL15 showed significantly lower frequency of MetS than obese girls with mUPD15 (41% vs 67%; p<0.02).

REFERENCES