Sleep quality and metabolic syndrome in pediatric patients with abdominal obesity

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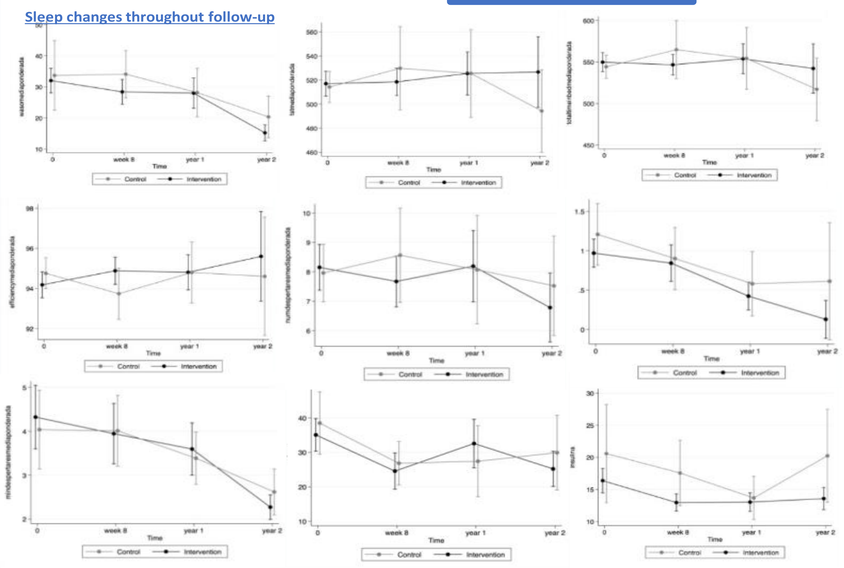
Aim: to evaluate sleep quality by accelerometry and its association with anthropometry and biochemical parameters in children and adolescents with abdominal obesity after a multidisciplinary intervention.

Patients, Material y Methods

- Patients: 122 children and adolescents, 7-16 years with abdominal obesity (waist circumference >p90) .
- **Multidisciplinary interventional study:** to lose weight, during 8 weeks (intensive phase**)** and yearly follow-up up to 2 years.
- Participant were divided in two groups: **intervention group** (hypocaloric Mediterranean diet), and **control group** (food pyramid recommendations, SENC, 2007).
- Both groups were encourage to increase moderate to vigorose physical activity in 200 minutes weekly.
- **Sleep:** evaluated by accelerometry (Actigraph GT3x, Actilife6 sofware) at onset, 8 weeks, year 1 and year 2 follow-up .
- **Sleep parameters:** number of awakenings, latency; total sleep time (TST), total bed time (TBT), awakenings duration, first awakening after sleep onset (WASO) expressed in minutes and efficiency expressed in percentage.
- **Anthropometric parameters**: weight, height, BMI, hip, waist and neck circumferencse, fat mas and fat free mass.
- **Biochemical parameters**: glucose, insulin, leptin, cholesterol y triglycerids.
- **Statistical analysis** : STATA 12.0.

Results

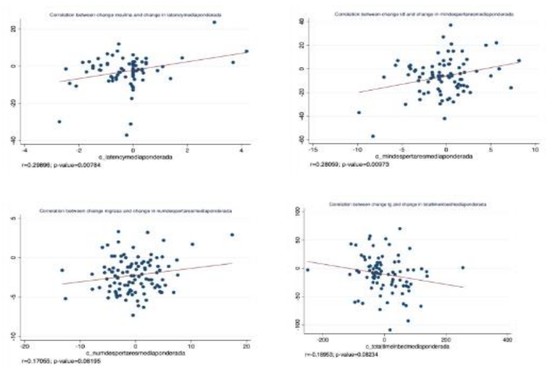
Sleep changes throughout follow-up



Basal associations between sleep parameters

	r	p
Latency and efficiency	0,37	0.00004
Latency and awakenings duration	0.35	0.00011
Efficiency and TBT	0.29	0.0001
Efficiency and WASO	0.76	0.00001
Efficiency and number of awakenings	0.54	0.00001
Efficiency and awakenings duration	0.49	0.0001
Number of awakenings and awakenings duration	0.24	0.0033
Number of awakenings and WASO	0.40	0.0001
WASO and TBT	0.33	0.001
Awakenings duration and WASO	0.33	0.000021

Associations between changes in biocehemical parameters, fat mass and sleep changes



CONCLUSIONS

The significant changes observed in anthropometric, biochemical and sleep parameters at the end of intervention are mantained throughout follow-up, allowing an improvement in metabolic syndrome, decreasing cardiometabolic risk and improving global sleep quality.

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