

Actigraphic analysis of activity levels in obese with binge eating disorder

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Altered Rest-Activity circadian Rhythm (RAR) are associated with a compromised health status. RAR abnormalities have been assessed in pathological conditions, such as neurological, cancer, and cardiovascular diseases [1]. Binge Eating Disorder (BED), characterized by obesity and motor inactivity, could produce RAR disruption with negative consequences on health-related quality of life. The aim of the present study was to evaluate RAR by actigraphy in obese patients with BED compared to a body mass index-matched control group (Ctrl).

Sixteen participants (8 obese women with and 8 obese women without BED diagnosis) were recruited to perform a 5-day actigraphic monitoring (MotionWatch 8®, CamNtech, Cambridge, UK) to estimate RAR.

The population mean cosinor applied to BED and Ctrl showed the presence of a significant circadian rhythm in both groups ($p < 0.001$). The MESOR (170.0 vs 301.6 a.c., in BED and Ctrl, respectively; $p < 0.01$) and amplitude (157.66 vs 238.19 a.c., in BED and Ctrl, respectively $p < 0.05$) resulted significantly different between the two groups. There were no differences between BED and Ctrl referring to Acrophase. The dysfunctional RAR found in BED cannot be related to obesity per se because the participants of the two groups were all obese with similar BMIs (31.3 ± 1.0 vs 31.6 ± 0.7 Kg/m² in BED and Ctrl, respectively).

These data represented the first actigraphy-based evidence of RAR disruption in women with BED. The circadian approach can represent a novel tool useful in the treatment of patients with eating disorders. The rest-activity circadian parameters should be assessed and managed to enhance interventions able to normalize the spontaneous activity level and improve the quality of life in BED patients.

References

- [1] Paudel et al. (2010) Rest-activity circadian rhythms and mortality rates in older men: MrOS Sleep study. *Chronobiol Int.* 27: 363-377.

Key words

Binge eating disorder, circadian rhythm, rest-activity cycle, actigraphs.