



## Correspondence

## Actigraphic evaluation in patients with endometrial cancer



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Endometrial cancer  
Rest-activity rhythms  
Actigraphy  
Obesity

## To the Editor

I read with interest the paper by Rumble and colleagues that appeared in an issue of *Gynecologic Oncology* (Rumble et al., 2015). The authors investigated the circadian rest-activity rhythm disturbances among 60 endometrial cancer patients after surgery, and identified predictors of dysregulated rest-activity rhythms by actigraphy. Namely, the rest-activity dysregulation significantly recovered after 4 months post-surgery, and obesity and receipt of more invasive surgery contributed significantly for the prediction of impaired rest-activity rhythms. I have some concerns on their study.

First, actigraphy has been used for monitoring sleep in cancer patients. Actigraphy contains a piezoelectric transducer that detects motion in two or three axes and generates a signal voltage. Using the activity information, sleep/wake judgment can be made according to the specific algorithm. For example, Innominato et al. (2016) recently observed significant improvements in a marker of objective sleep quality, sleep fragmentation and quantity in patients with advanced breast cancer by prescribing 5 mg of melatonin at bedtime without adverse effect on circadian rhythmicity or the diurnal cortisol pattern. Innominato et al. (2016) used Motionlogger actigraph (Ambulatory Monitoring Inc., Ardsley, New York), and the level of activity was monitored to check circadian rhythm. In contrast, Rumble and colleagues used Actiwatch 64 (Mini-Mitter, Bend, OR) to measure rest-activity patterns. There is a review on the usefulness of several commercially-based accelerometers (Morgenthaler et al., 2007), and there is a gap of each sleep parameter from different accelerometers (Meltzer et al., 2012). This means that direct comparison of rest-activity rhythms with different accelerometers should be paid with caution. In addition, brain activity during sleep cannot be adequately predicted by physical movement, especially in insomniacs.

Second, Ancoli-Israel et al. (2014) conducted a 1-year longitudinal study, and patients with stage I-III breast cancer showed worse sleep, increased fatigue, more depressive symptoms, and more disrupted circadian activity rhythms compared to their own baseline levels and to cancer-free controls after treatment. I suppose that relatively high prevalence of insomnia would be suspected in patients with endometrial cancer, and mental status should be evaluated as further study.

Relating to the second query, Rumble and colleagues clarified that obesity was related to the impaired rest-activity rhythms. On this point, Smits et al. (2015) confirmed that obesity was not significantly associated with emotional and cognitive functioning. Causal association among mental status, obesity and impaired rest-activity rhythms should be specified.

## Conflict of interest

The author declares no conflict of interest.

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