

**Short Communication**

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# YOGA as a Potential Mind-Body Medicine for Circadian Rhythm Restoration for Cancer Patients

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Cancer patients receiving chemotherapy suffer from a variety of side effects, including insomnia [1]. However, the underlying mechanisms behind insomnia during and/or after chemotherapy are not yet fully understood. Both cancer and anticancer therapeutics alter the production of proinflammatory cytokines such as sleep inducers TNF- $\alpha$ , IL-1  $\beta$  and IL-6, to change the immune responses depending on immune cells repertoires, which subsequently function on the central nervous system and the sleep-wake rhythms, by which to alter sleep behavior [2,3].

Currently no specific treatment for chemotherapy-related insomnia, nonprescriptive and prescriptive sleep medicines are the only way to choose even though those medications have not been evaluated in cancer patients. On the other hand, although dysfunction in circadian rhythms is a common occurrence in older adults and is a symptom of neurodegeneration [4], studies also suggest that circadian rhythm disruptions might potentially risk for developing neurodegenerative diseases such as Alzheimer's disease [5-7] and Parkinson's disease [7,8]. Although the causal-relationship requires to be evaluated in larger and longitudinal studies [9,10], it points the importance to address chemotherapy-related insomnia to improve patients' potentials to complete treatment for cancer, the recovery rate, and their quality of life.

Yoga is the original mind-body medicine that keeps physical homeostasis as well as mental and spiritual harmony in human. Several evidence-based mind-body medicine, including yoga, have been successfully used for the management of insomnia and have demonstrated efficacy in cancer patients receiving chemotherapy [11,12]. Indeed, yoga has been shown to improve sleep quality of chemotherapy-related insomnia especially for breast cancer patients [13-17], however, the underlying mechanism require to

be identified. In addition, whether it is potent enough to manage chemotherapy-related insomnia for other cancer patients require further investigation. More high-quality randomized control trials to support the scientific evidence are warranted. This is what we eager to work on.

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**Conflict of Interest**

No conflict of interest.

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