Psychiatry and hypersomnia: remaining research area in sleep medicine

Makoto Honda^{1,2}

Published online: 29 May 2017
© Japanese Society of Sleep Research 2017

It is my great pleasure to be an associate editor of *Sleep and Biological Rhythms* from Dec 2016. I am a psychiatrist and will cover the field of sleep medicine.

Despite remarkable recent advances on the relationship between somatic symptoms (especially metabolic and immune-related disease) and sleep disorders, the relationship between psychiatric symptoms and sleep disorders remains to be elucidated. There could be 3 models to understand the relationship between psychiatric symptoms and sleep disorders/sleep wake dysregulation. The first and traditional model regards sleep disorder as one associated symptom of psychiatric disease. The second model is that sleep disorders and psychiatric symptoms have bi-directional influence under the assumption that they have independent mechanisms. For example, insomnia is a risk

factor for (and a main symptom in) depression, but insomnia can remain after the remission of depression so that independent treatment for insomnia is sometimes required. This “comorbidity” model seems to be currently a leading hypothesis. I would like to propose the third study model, which is based on the assumptions that intrinsic sleep disorders and psychiatric symptoms share common pathophysiological mechanisms and various psychiatric symptoms can be understood as a phenotype of sleep wake dysregulation. Hypersomnias are typical examples to have intrinsic sleep wake dysregulation and tend to show psychiatric symptoms associated with the decrease in consciousness level. To explore this third study model, I think it is useful to revisit the detailed clinical observation studies on psychiatric symptoms and hypersomnia.

I would like to introduce two excellent case reports published more than 50 years ago. Both were known in Japan but not so worldwide, because they were written in Japanese. Both studies handled various symptoms in hypersomnia from a neuropsychiatric point of view, including several cases with delusion or hallucination. I believe we can still take lessons from these case reports, and the intriguing symptoms presented more than 50 years ago still await further investigation from the standpoint of current knowledge.

First paper is by late Dr. Yutaka Honda entitled “Clinical studies on the diencephalon-related psychic symptoms” published on 1960 [1]. Twenty-four cases were described and he concluded that diencephalon-related somatic and psychiatric symptoms progress or fluctuate simultaneously in phases or attacks. Sixteen of 24 cases corresponded to narcolepsy type 1 in the current diagnostic criteria. Besides somatic symptoms such as body weight gain in 14 cases and precocious puberty in 6 cases, he described 9 narcolepsy cases with dream-like altered

✉ Makoto Honda
honda-mk@igakuken.or.jp

¹ Sleep Disorders Project, Tokyo Metropolitan Institute of Medical Science, Tokyo, Japan

² Institute of Neuropsychiatry, Seiwa Hospital, Tokyo, Japan

consciousness when awake, 5 of them showed hallucinations and delusions. He cited the first Japanese narcolepsy case with peculiar hallucination (Utena 1939) and discussed the characteristic state of consciousness during awake formed the basis of these psychotic symptoms. He also reported that narcolepsy patients had characteristic personality such as good-naturedness and easy-going way of living, which he later named as “narcoleptoid personality”. Factors forming this unique personality need to be elucidated from both social and biological point of view (orexin/hypocretin deficiency).

Second paper is by Dr. Yasuro Takahashi entitled “Clinical studies of periodic somnolence: Analysis of 28 personal cases” published on 1965 [2]. He emphasized the importance of following conditions to distinguish patients of “periodic hypersomnolence”: (1) patients repeated transient hypersomnolence periods lasting 1–2 weeks, with relatively clear beginning and ending of the phase. (2) The cardinal symptom was increased sleep tendency during hypersomnolence period. It corresponded to “Kleine–Levin syndrome” in the current diagnostic criteria. Most Japanese patients showed decreased appetite (24/28) and that Kleine–Levin type with hyperphagia were a minority (3/28). Prodromal symptoms such as feeling heavy-headed, woolly minded or tiredness were noted in 21 of 28 cases. Depersonalization experience was common (17/28). Hallucinations (olfactory, visual phantasy-like), hypersensitivity or oneiroid state were noted in 5 atypical cases. On EEG, 52% (12/23) patients showed slowing of basic rhythm, sometimes with diffuse alpha pattern (8/23), even during interictal period. Fifteen patients also underwent EEG during hypersomnolence period and 73% (11/15) showed further slowing of basic rhythm during hypersomnolence period. He discussed that the pathophysiology

of this disorder was essentially the global decline of brain function corresponding to the subtle consciousness disturbance.

Now knowledge and technology for sleep science has reached an advanced stage, their application to understand cortical arousals/consciousness underlying higher brain function are expected. It is the homework of current and following generation to confirm the suggestions or to answer the questions raised by Dr Y. Honda and Y. Takahashi 50 years ago, such as how atypical intriguing psychiatric symptoms occur, how hypothalamic functions are related to the fluctuation of psychiatric symptoms, and why altered consciousness results in hallucination or psychotic state. It will bring a breakthrough in the pathogenesis of not only hypersomnia with hallucination, but also psychiatric diseases in general.

Since meta-analyses or case reviews are mostly done for literature written in English (or French) only, these valuable case reports in Japanese were mostly neglected. I would like to encourage the readers to take lessons from old but excellent clinical descriptions to improve their daily clinical practices, and also to write good case reports with variety of clinical symptoms in English, citing appropriate literatures in Japanese. SBR accepts good case reports.

References

1. Honda Y. Clinical studies on the diencephalon-related psychic symptoms. *Psychiatria et Neurologia Japonica*. 1960;62:297–325.
2. Takahashi Y. Clinical studies of periodic somnolence : analysis of 28 personal cases. *Psychiatria et Neurologia Japonica*. 1965;67:853–89.