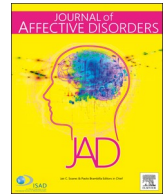




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Short communication

An Acute Manic Episode During 2019-nCoV Quarantine

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ABSTRACT

Background: The 2019-nCoV pandemic is currently a stressor for the general public worldwide. In China, people who have a history of contact with infected or suspected individuals need to quarantine for at least 2 weeks. Many people experienced anxiety, panic and depression in the quarantine period. However, acute manic episode triggered by stressful events is not common and was neglected.

Case presentation: A 32-year-old woman with direct contact history with her infected colleagues showed elevated mood and increased activity when she was identified negative of nuclear acid amplification test, after experiencing extreme stress in quarantine. She was diagnosed with acute manic episode finally. The social zeitgeber and reward hypersensitivity theoretical models have attempted to use psychobiological perspectives to determine why life stress can trigger a mood episode, including (hypo)mania. Besides, the temporal correlation between her somatic symptoms and psychological stimuli indicated a possibility of functional disturbance under acute stress.

Conclusion: Quarantine is a major stressful event disrupting social zeitgebers for people who have had contact with infected individuals, especially for vulnerable individuals with a hypersensitive reward system. Stress could act as a trigger in the onset of manic episode, so psychological support should be more targeted at the vulnerable individuals in the initial phase of emergent crisis.

1. Introduction

In late December 2019, a novel coronavirus designated 2019-nCoV was recognized in Wuhan, Hubei Province and rapidly spread across China and many other countries. The increasing number of confirmed cases and the human-to-human transmission route of the virus made it a global public health emergency of International Concern (PHEIC) and elicited public panic (Bao et al., 2020). In China, people who have a history of contact with infected or suspected individuals need to quarantine for at least 2 weeks since public health emergency responses have been upgraded to the highest level throughout the country (Bao et al., 2020). In the quarantine period, many people experience negative emotions such as confusion, anxiety, depression and fear, especially due to the lack of contact with families and the lack of psychological care in the initial phase of the outbreak (Wang et al., 2020). To date, studies about psychological impact pay more attention to mental disturbances such as anxiety, depression and panic, however, acute manic episodes triggered by stress are neglected. Herein, we present a case of a female patient who experienced first-episode mania during the quarantine period.

2. Case report

A 32-year-old woman was brought to our hospital for treatment for a 1-week history of abnormally elevated mood and increased activity developed in quarantine. In January 2020, two colleagues, with whom the patient shared the same office, tested positive for 2019-nCoV. Although she wore a mask at that time because she got a cold before and needed to keep her 20-month-old daughter safe from infection, she was still at high risk of infection. After the identification of the two colleagues, she immediately received the first nucleic acid amplification test, which was reported to be negative, and then, she socially isolated at home. When the prevention measures were upgraded on 20th January 2020, she was officially quarantined for medical observation. Her fear and anxiety about the unknown increases when she was informed about the isolation by local Centers for Disease Control and Prevention (CDC) officials because she was living together with her family on the day that she got the first negative nucleic acid test, which she later thought was due to being in the incubation period. On the first day of isolation, she had physical symptoms highly suggestive of potential infection: her temperature was 37.6°C, other symptoms included fatigue, nausea, vomiting and diarrhea. Due to the fear of being infected, she underwent chest CT scanning and a second

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nucleic acid test. While anxiously waiting for results, she became sleepless and kept a watchful eye on the overwhelming news about pneumonia all night. Negative thoughts raced through her head until the next day, when she received negative results. She was diagnosed with suspected acute gastroenteritis and treated symptomatically. Shortly thereafter, her somatic symptoms recovered. With all of her stress alleviated, she ran outside of the isolation unit barefooted with no regard for rules or warnings, and she believed that she had superpowers and was immune to all viruses in nature. Her mood was cheerful and irritable, and she became very talkative in a demanding manner (she easily got into arguments with others over any issues, including her boss, and she forced the medical staff take off the protective clothing when contacting her), even though it was hard to follow her flighty ideas. She also exhibited crying spells, impulsive behaviors and poor sleep. Because she was unmanageable in the isolation unit, she was referred to a local mental health service. After being prescribed 100–200 mg quetiapine per night for three days, her sleep improved. For better treatment, she was transferred to our hospital by her parents. A third nucleic acid amplification test was performed, and the results were negative.

When first admitted here, she still had euphoric and irritable mood; her speech was pressured and loud; she abruptly shifted from one topic to another; and she made hostile comments if she was interrupted. She spoke about politics, religion, and any other grand and abstract issues; in addition, she felt full of energy, enough to make excessive plans for complex tasks not only related to her own job but also the psychological service during the crisis in China (she blamed the lack of psychological support in the isolated unit). Other symptoms included increased social activity (she became acquainted with other patients easily) and grandiosity. No psychotic features were presented in the episode. Her social functioning before hospitalization was good; she obtained a master's degree and is employed as a research fellow at a famous university in China. She never used alcohol, tobacco, or illegal substances. No family member has psychiatric illnesses, but her mother has a suspected history of depression. She has an open and hyperthymic nature, but she was also known to be short-tempered and vulnerable to stress under less stressful conditions. According to her self-report, she abandoned her doctoral studies since the academic stress was overwhelming, although she had already been accepted to a doctoral program.

She was physically healthy and had no previous psychiatric diagnosis. The general physical and neurologic examinations did not identify any abnormalities, and her temperature was normal. All routine laboratory tests were within normal ranges; chest CT scanning and cranial magnetic resonance imaging showed no significant findings. She scored 39 out of 44 points on the Young Manic Rating Scale. After acute stress disorders and dissociative disorders were excluded, and acute manic episode was given as her final diagnosis in accordance with the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. She was coadministered with quetiapine at a dosage that gradually escalated up to 400mg per night and lithium carbonate 300mg three times a day for mood stabilization. After 3 weeks of treatment, her emotion became stable, and her condition improved.

3. Discussion

This present case raises concerns about the relationship between stressful events and manic episodes, which has rarely been investigated in previous studies. Stress is a well-known contributing factor to the trajectories of psychiatric disorders and can affect the onset and transition of an affective disorder to a full-blown episode (Chaumette et al., 2016). Many reports, including the earliest work of Kraepelinian era of psychiatry, suggested temporal closeness and selective association between stressful events and first mania episode (Ambelas, 1987) (Ambelas, 1979), and several theoretical models have attempted to use psychobiological perspectives to determine why life stress can trigger a mood episode, including (hypo)mania. The social zeitgeber theory

proposes that stressful life events characterized by disrupting social zeitgebers (i.e., personal relationships, social demands and other external cues that function to entrain biological rhythms) lead to disturbances of social routines and the instability of biological circadian rhythms, which were implicated in the pathogenesis of mania in vulnerable individuals (Finkelstein, 1989, (Grandin et al., 2006, (Malkoff-Schwartz et al., 1998). Gender, coping, personality, social support and other psychosocial variables may act as intervening variables in the relationship between life stress and affective disorders (Leskelä et al., 2004). For this case, the cessation of working, the lack of interpersonal relationships and the lack of affective support in isolation would be sufficiently stressful to disrupt social and biological rhythms, such as changes in sleep patterns, and thus induce mania. The reward hypersensitivity theory provides another explanation for the association between stressful events and mania episodes. This model hypothesizes that vulnerability to affective disorders is the result of a hypersensitive reward system that reacts more strongly to external or internal goal- and reward-related life events, and an excessive reward state could be activated by positive goal-striving emotions such as hope and happiness, which in turn lead to a cluster of (hypo) manic psychomotor activation symptoms (Alloy et al., 2015). This patient's achievement of the goal of being COVID-negative, as an event involving goal attainment, may have triggered excessive responses and the onset of a mania episode. Based on the two models above, a novel, integrated reward/circadian rhythm dysregulation theory was proposed recently (Alloy et al., 2015). Reward-hypersensitive individuals who experienced a state of excessive reward activation in response to goal-related events are likely to disrupt social and thus circadian rhythms, which in turn trigger manic symptoms.

The somatic symptoms of the patients were hard to explain since the information was not clear and the blood results were not provided. In retrospect, the onset and recovery of her physical symptoms temporally correlated with change in psychological stimuli. She manifested mild fever, nausea and diarrhea on the first day of medical quarantine, and the symptoms persisted until the nuclear acid test was identified negative. There might be a possibility that the somatic symptoms were functional manifestations under acute stress because robust evidence supports the relationship between stress and functional disturbances such as functional gastrointestinal disorders (Holtmann, et al., 2017). Of course, acute gastroenteritis was a suspected diagnosis based on symptomatology at that time, and whether it was just a functional manifestation or with an organic pathology needs further confirmation through consultation with gastroenterologist and more laboratory tests.

4. Conclusion

The 2019-nCov pandemic is currently a stressor for the general public worldwide. Quarantine is a major stressful event disrupting social zeitgebers for people who have had contact with infected individuals, especially for vulnerable individuals with a hypersensitive reward system. Stress could act as a trigger in the onset of manic episode, so crisis intervention for individuals in isolation during the initial phase of outbreak is very important but was not available for this patient. Furthermore, psychological support system should respond more rapidly and target people with higher risk, such as medical staff, infected patients and those in quarantine for medical observation.

Author statement

Xiaowen Yin, Yuyong Sun, Chunyan Zhu and Dongfang Gou were responsible for clinical care, did literature search, and drafted the manuscript. Beiyong Zhu and Zhonglin Tan revised the manuscript. All authors contributed to and have approved the final manuscript.

Conflict of interest

All authors declare that they have no conflicts of interest.

Contributors

Xiaowen Yin, Yuyong Sun, Chunyan Zhu, Dongfang Gou and Zhonglin Tan were responsible for clinical care. Xiaowen Yin did literature search, and drafted the manuscript. Beiyang Zhu and Zhonglin Tan revised the manuscript, and all authors contributed to and have approved the final manuscript.

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