



Case report

Fluoxetine combined with risperidone in treatment of online gambling disorder-case report

Mei Bai ^{a,*}, Erjia Huang ^{b,c,1}, Huijie Du ^{a,1}, Lu Yang ^a, Xin Zhang ^a, Yang Yang ^a, Zhe Yan ^a, Wei Wang ^a^a The First People's Hospital of Guiyang, Guiyang, Guizhou, 550001, China^b Clinical Nursing Teaching and Research Section, The Second Xiangya Hospital, Central South University, Changsha, China^c Department of Cardiovascular Surgery, The Second Xiangya Hospital Central South University, Changsha, China

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ABSTRACT

Pathological gambling leaves seriously negative impacts on individuals, families, and society. With the universal use of internet, online gambling disorder is also increasing worldwide. However, there is currently a lack of effective treatments, especially medical treatments, for online gambling disorder. This study shared 3 cases of online gambling disorder that was treated with combined fluoxetine and risperidone to provide an option for the treatment of online gambling.

1. Introduction

Gambling disorder is a persistent or recurrent gambling behavior [1]; it is currently considered to be an important public health problem, associating with a high psychiatric comorbidity, damage to personal health, high suicide rate, and substantial personal and social costs [2]. A large meta-analysis of prevalence demonstrated that gambling affected 0.2%–4.0% of the population, with 0.2%–2.1% of the population eventually developing a gambling disorder [3].

Since the establishment of the first online gambling website in 1990, online gambling has experienced explosive growth [4]. Numerous problems have arisen with the development of online gambling, such as family conflict, unemployment, school dropout, crime, and suicide [5]. As such, intervention for online gambling disorder has become urgent and important. Some studies suggest that psychotherapy, such as cognitive behavior therapy and motivational interviewing, may be effective for gambling disorder [6]; however, there is currently no officially approved pharmacological intervention for this disorder. This study retrospectively analyzed 3 cases of online gambling disorder treated with combined fluoxetine and risperidone.

1.1. Case 1

Patient was a 26-year-old male that was admitted to our hospital on December 30, 2019, due to “addiction to online gambling for over 3 years”. The patient started gambling through his mobile phone, which progressed into frequent gambling that would only cease for sleeping and school drop-off. As the patient continued to lose money, he started to borrow money and accumulated vast gambling

* Corresponding author.

E-mail address: keaiakoala@126.com (M. Bai).¹ Erjia Huang and Huijie Du contributed equally as first authors.<https://doi.org/10.1016/j.heliyon.2023.e13772>

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debts. The patient had suicidal thoughts attributed to being unable to repay the gambling debts, but there was no suicidal behavior. The patient did not graduate from college due to gambling, was unable to concentrate on work, was nervous, and had poor sleep. The patient's family tried various methods, including psychotherapy in another hospital (once per week for 6 months), to prohibit him from gambling, but they were unsuccessful.

The patient had a history of smoking for over 3 years, but he denied drinking alcohol and taking other psychoactive substances. The patient also had few friends. The general admission examinations were normal with clear consciousness. The physical examinations showed that the heart, lungs, abdomen, and nervous system were all within normal limits. The psychiatric examination showed anxiety and passive contacts. Anxiety symptoms, such as upset and worry, were reported, but no psychotic symptoms, such as hallucinations, delusions, etc., were reported. The patient showed partial insight. No abnormality was found in routine blood tests, liver and kidney function tests, thyroid function test, routine stool tests, electrocardiogram, electroencephalogram, chest CT, and head CT. Psychological tests showed a score of 158 in the Symptom Checklist-90 (SCL-90, normal <67 scores), a score of 17 in the Hamilton Anxiety Rating Scale (HAM-A, <17 indicates mild severity, 18–24 mild to moderate severity, 25–30 moderate to severe), a score of 10 in the Hamilton Depression Rating Scale (HAM-D, normal <7 scores), and a score of 13 in the Pittsburgh Sleep Quality Index (PSQI, a score >5 is considered as a significant sleep disturbance).

The patient was given fluoxetine [40mg by mouth (po), once daily (qd)], risperidone (1mg once nightly), and lorazepam [0.5mg po, once nightly (qn)] for 22 days. At the same time, the patient received cognitive behavior therapies (6 times) and repetitive transcranial magnetic stimulations (rTMS:10 Hz, left dorsolateral prefrontal cortex (DLPFC), 22 times). After 22 days of treatment, psychological tests showed obvious improvement (SCL-90: 110, HAM-A: 8, HAM-D: 6, and PSQI: 4 scores). The patient was discharged due to no longer presenting with gambling thoughts and behaviors. The follow-up time was 22 months after discharge. The patient was taking medication regularly, and he had returned to a normal life and work without gambling thoughts and behaviors.

1.1.1. Case 2

The patient was a 27-year-old male that was admitted to our hospital on April 25, 2020 due to “uncontrollable gambling behavior for over 6 years”. The patient started gambling by buying World Cup lottery tickets online. He then became addicted to gambling and spent all of his income on gambling. He progressed into borrowing money from colleagues and relatives, followed by borrowing money from loan sharks and online platforms. The patient felt bored, tired, and weak if he did not gamble. He was unwilling to communicate with others. When his family brought up their concerns to him, he became irritable and angry even at the smallest complaint. Gambling made him feel happy and satisfied. He stated no symptoms of high energy, high mood, decreased sleep needs, etc.

The patient denied a history of smoking, drinking, and other psychoactive substance use, but he received about half of a year of psychotherapy (once per week) in another hospital without obvious improvement. The admission examination was generally normal. The psychiatric examination showed anxiety and passive contacts. Anxiety symptoms, such as feeling upset, were reported. No psychotic symptoms, such as hallucinations, delusions, etc., were reported. The patient had partial insight. No abnormality was found in routine blood tests, liver and kidney function tests, thyroid function test, routine stool tests, electrocardiogram, electroencephalogram, chest CT, and head CT. The patient scored 172 on the SCL-90, 14 on the HAM-A, 19 on the HAM-D, and 13 on the PSQI.

The patient was treated with fluoxetine (40 mg po qd) and risperidone (1 mg qn) for 23 days, alongside cognitive behavioral therapies (6 times) and rTMS (10 Hz, left DLPFC, 22 times). After 23 days of treatment, psychological tests were improved (SCL-90: 122, HAMA: 2, HAMD: 6, and PSQI: 2 scores). The patient stated obviously less anxiety than before and was discharged with no gambling thoughts and behavior. After discharge, he took medicine regularly. The follow-up time was 19 months after discharge. The patient had returned to normal work and life without gambling thoughts or behaviors.

1.1.2. Case 3

The patient was a 20-year-old male that was admitted to our hospital on July 18, 2020 due to “repeated gambling for over 4 years”. The patient started to gamble with red envelopes, and gradually became addicted to gambling. He spent all of his money on gambling, and then he borrowed money from relatives and friends; he even asked his family to pay his gambling debts for him. Two years ago, his family became unable to afford the patient's gambling debt, and then they repeatedly persuaded the patient to quit gambling. The patient received over 6 months of psychotherapy several months ago in another hospital. However, the patient still felt upset, irritable, restless, flustered, dizzy, insomnia, and other discomforts after quitting gambling. The patient started gambling again before the patient was admitted to our hospital.

The patient denied a history of smoking, drinking, and use of other psychoactive substances. His character was relatively introverted and inferior. The patient complained of poor spirit, poor diet, and poor sleep. His stools were normal, and there were no significant changes in body weight. The admission examinations were normal with a clear consciousness. The physical examinations on the heart, lungs, abdomen, and nervous system showed no obvious abnormalities. The psychiatric examination found clear consciousness, sad expression, and passive contacts. A decrease in interest, pleasure, and motivation were found, along with other depressive emotions. No hallucinations and delusions were found. The patient had partial insight. Examination for routine blood tests, liver and kidney functions, thyroid function, routine stool tests, electrocardiogram, electroencephalogram, chest CT, and head CT showed no abnormalities. The patient scored 172 on the SCL-90, 14 on the HAM-A, 27 on the HAM-D, and 14 on the PSQI.

The patient was treated with fluoxetine (40mg po qd) and risperidone (1.5mg qn) for 22 days, alongside cognitive behavioral therapies (6 times) and rTMS (10 Hz, left DLPFC, 22 times). The patient was discharged due to no longer having gambling thoughts and behavior. Psychological tests before discharge showed obvious improvement (SCL-90: 118, HAM-A: 8, HAM-D: 11, and PSQI: 8 scores). The follow-up time was 16 months after discharge. The patient stated no longer having gambling thoughts and behaviors, and his depression symptoms were significantly improved.

2. Discussion

Gambling disorder, formerly known as pathological gambling, is classified as “substance-related and addictive disorders” in the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V). According to the diagnostic criteria for the aforementioned disorder, the three patients in this study can be clearly diagnosed with online gambling disorders. Studies have demonstrated that about 1/3 of patients with gambling disorder can recover spontaneously without any professional intervention [7], but the average spontaneous recovery length is 19 years [8]; this indicates that pathological gambling not only has a low rate of natural recovery, but also takes a long time to recover without treatments. Thus, effective clinical intervention is important. Behavioral therapy is reported to be effective for gambling disorders, including cognitive-behavioral therapy [9], but psychotherapy alone seems to have been ineffective in these three cases. Therefore, we conducted corresponding cognitive-behavioral interventions alongside medication therapy for all three patients.

Although there are no officially approved pharmacological interventions for gambling disorder, medication therapy is still thought to be effective in reducing gambling frequency and the urge to gamble [10]. The medications used for treating gambling disorder mainly include opioid receptor antagonists, serotonin reuptake inhibitors [11], antipsychotics, and mood stabilizers. Antidepressants were first used for the treatment of gambling disorders; this was based on the symptom correlation of gambling disorder with obsessive-compulsive spectrum disorder [12] and the abnormality of serum serotonin in patients with gambling disorder [13]. In contrast, later studies have focused more on opioid receptor antagonists due to the commonality of gambling disorder and substance use disorder. However, opioid receptor antagonists seem to only be effective in some patients [14]. In addition, most studies only explore single-drug therapy or a single-drug combined with psychotherapy, with varying effects in different studies. This has prompted us to find new treatment options. An international survey study on the treatment of obsessive-compulsive disorder [15] demonstrated that fluoxetine and fluvoxamine were the most used SSRIs, while risperidone and aripiprazole were the most used antipsychotics. Although risperidone or aripiprazole has been used alone for treating gambling addiction, the effect is variable [16]. Fluoxetine has rarely been reported for treating gambling addiction. Considering the long half-life of fluoxetine, the subsequent low risk of discontinuation syndrome of fluoxetine, and the high cost-effect of risperidone, we chose fluoxetine combined with risperidone for treating online gambling disorder.

In conclusion, fluoxetine combined with risperidone may be effective for treating online gambling disorder. However, these three cases received cognitive behavior therapies and rTMS at the same time. Thus, it is difficult to know if it was these cognitive behavior therapies, transcranial microcurrent stimulations, the risperidone, the fluoxetine, or some combination or other factor, that led to the improvement. Although a study demonstrated that multiple sessions of high-frequency rTMS can reduce gambling symptoms in 2–3 week, it lacks a control group [17]. In contrast, Ekhtiari review study revealed that it requires at least 4–6 weeks of daily rTMS over left DLPFC to induce significant clinical improvement [18]. Thus, we do not think rTMS playing a key role in the treatment efficacy in our cases. Therefore, a multicenter, randomized controlled study with a larger sample size, and control groups with only cognitive behavior therapy, rTMS, fluoxetine, or risperidone, would be required to arrive at a solid conclusion”. The current study may only suggest that the combination is a viable additional therapy when used simultaneously with cognitive behavior therapy and rTMS, and it may have a relapse prevention role, as both psychotherapy and TMS are usually given as acute courses of treatment rather than as longer-term maintenance strategies.

Informed consent was obtained from all study participants. Additional data on these three cases can be provided upon the requirement of the author.

Author contribution statement

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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