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Residential Treatment of a Woman with A Severe Tobacco Withdrawal Syndrome: A Case Report

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Abstract

Introduction: Tobacco use disorder is a significant public health challenge, requiring innovative smoking cessation approaches. Residential treatment programs have been suggested as alternative options for addressing tobacco use disorder. However, there exists a scarcity of research concerning residential programs designed exclusively for individuals with tobacco disorders.

Case Presentation: We present the case of a 33-year-old woman grappling with tobacco use disorder and abnormal Pap smear results. In pursuit of quitting smoking, the patient enrolled in a 10-day residential program. Although challenges remain in sustaining complete abstinence, the positive health outcomes experienced by the patient emphasize the potential of residential treatment.

Conclusion: This case demonstrates the option of a residential smoking cessation program exclusively designed for smokers with a medical urgency.

Keywords: case report, residential smoking cessation, tobacco use disorder

Introduction

Background

Persistent tobacco use, primarily attributed to Tobacco Use Disorder (TUD), presents a significant challenge to both individual health and public well-being. Current smoking cessation methods encompass self-help programs, individual or group counseling, and cognitive-behavioral therapy. Pharmacological aids, including over-the-counter options such as nicotine patches, gum, sprays, inhalers, and lozenges, as well as prescription medications such as bupropion and varenicline, are commonly employed to assist individuals in quitting smoking. However, the long-term success rates of these treatments remain relatively modest. **[1]** This case outlines the situation of a woman diagnosed with severe TUD who struggled to quit smoking using traditional methods. The patient had a medical imperative to quit smoking due to an abnormal Pap smear, a screening test for cervical cancer in women.

Case presentation

A 33-year-old single mother who has been smoking consistently for approximately two decades at a rate of 10-15 cigarettes per day lives alone with her 10-year-old daughter and works as a personal healthcare assistant. A referral to addiction medicine care was made by her gynaecologist aimed to stop smoking. Central to her medical condition was an abnormal Pap smear requiring surgical intervention. Smoking cessation became imperative to enhance surgical outcomes and reduce future abnormalities in Pap smear results.

Initiating her tobacco use at the age of 13, the patient attempted multiple cessation efforts without success. Pharmacological interventions, such as varenicline, were discontinued due to adverse effects, including anxiety and panic attacks. Similarly, the utilization of nicotine replacement therapy did not yield the desired outcomes. During her pregnancy in 2013, she reduced smoking to 3 cigarettes per day but struggled to quit completely. Despite her strong desire to completely abstain from smoking during this crucial period, she encountered overwhelming obstacles in giving up the final 3 cigarettes. These obstacles were severe agitation, resulting in aggression towards objects, restlessness, and a severe craving for tobacco.

In addition to her tobacco addiction, the patient faces excessive use of caffeine and sugar, consuming 6 liters of carbonated cola beverages daily. Dietary habits were compromised, with a body mass index of 24.6kg/m2. Her two brothers had severe alcohol and drug dependencies. A high smoking prevalence in her family contributed negatively to her own TUD. Furthermore, her medical history included a slow-working thyroid, for which she takes substitution therapy, a whiplash injury due to a car accident 9 months before her admission to the addiction facility, and hypercholesterolemia. Her psychiatric history reports post-traumatic stress disorder. Apart from thyroid substitution therapy, she did not use any other medications.

In pursuit of addressing her tobacco use disorder (TUD) comprehensively, the patient enrolled in an outpatient smoking

cessation(open) group therapy program comprising six mandatory weekly sessions. The therapy group size of this program, rooted in cognitive behavioral therapy, was six individuals at varying stages of treatment. Initially, the patient exhibited great enthusiasm and motivation to quit, leading to reported successful smoking cessation by the second week, just before her scheduled surgical procedure. This achievement was notably influenced by the impending surgery. However, her surgery coincided with the group therapy period, causing her to miss a session. Despite recording deficient levels of exhaled carbon monoxide measured with the smokerlyzer, a subsequent revelation revealed partial cessation; she admitted a week post-surgery that she still struggled to abstain from the final 3 cigarettes due to withdrawal symptoms like aggression towards objects and severe cravings, a situation similar as previous quit attempts.

Stress, concerns about her health and future, coupled with a profound sense of personal failure, particularly as a mother and role model for her daughter, contributed to an increase in her smoking behavior, escalating to 7-10 cigarettes a day approximately five weeks after the start of group therapy. Excessive use of caffeine and sugar was monitored and addressed during the group sessions. The patient reduced her caffeine intake to a maximum of 0.5L of carbonated sugar-free cola daily. Additionally, she started eating three balanced meals daily, resulting in weight loss and increased energy levels.

Because of the severe tobacco withdrawal syndrome, as the ultimate step towards ensuring sustained smoking cessation, the patient was offered clinical admission to our completely smoke-free addiction facility, where she underwent a personalized ten-day detoxification and smoking cessation program. **[2]**

Residential program

Upon admission to the clinic, the patient's daily cigarette consumption had reduced to 4 cigarettes per day, and she expressed a strong desire to quit smoking. She smoked her last cigarette on the day of the admission five minutes before walking through the clinic doors. The initial day within the clinic marked a significant challenge, with the patient reporting intense cigarette cravings, rating them at a severity level of 10/10 on a subjective numeric rating scale (NRS). The first 48 hours of her admission were characterized by the patient enduring severe cravings and experiencing withdrawal symptoms, including mood swings, irritability, and insomnia. Complicating her admission was the presence of pain stemming from a whiplash injury that had occurred several months before her admission. The pain, compounded by a simultaneous lack of sleep, led the patient to question on the fourth day of residential treatment whether she should continue her stay in the clinic. Following consulting her physician at the clinic and her general practitioner and the prescription of appropriate pain management medication, the patient decided to proceed with her treatment at the addiction clinic.

Throughout the patient's admission, she actively participated in a program encompassing diverse therapeutic activities. The carefully designed schedule intentionally establishes a supportive and comprehensive, completely smoke-free environment tailored to meet the patient's specific needs. This individualized and multidimensional approach integrates therapeutic interventions, such as physical activity, music therapy, and stress management techniques, and educational components (i.e., psycho-education about substance use disorder) supported by community and peer interactions within the addiction support group. Physical activity was employed as both a distraction and an alternative source of dopamine release, thereby delaying cravings. A vital component of the treatment strategy involved the integration of cognitive-behavioral therapy elements, with a specific emphasis on addressing risk factors for relapse. Reflective practices play a crucial role, contributing to a well-rounded strategy that addresses various dimensions of TUD while nurturing the patient's overall well-being. Daily venting conversations to increase feelings of connectedness and boost self-confidence and regular discussions addressing moments of craving are also integral aspects of this approach; the patient's progress, including withdrawal, motivation, insight into relapse risk situations, and confidence in managing these situations, was monitored by the clinic's physician assistant. Throughout the admission, an addiction medicine physician was readily accessible for consultation, although no medication was administered. This decision was made in agreement between the patient and the addiction medicine physician during outpatient consultations before admission to maximize the period of nicotine abstinence during the inpatient stay. Her daughter stayed at a friend's house and also visited the clinic, maintaining close contact. She served as a significant source of support for the patient.

Outcomes

The comprehensive assessment conducted during the admission intake interview utilized several validated questionnaires to evaluate various aspects of the patient's well-being. The Manchester Short Assessment of Quality of Life (MANSA) provided insights into job satisfaction, home life, and overall health. **[3]** The Fagerström test for Nicotine Dependence (FTND) assessed the severity of nicotine dependence **[4]**, while the "Positive Health" questionnaire measured dimensions such as Body Functions, Mental well-being, Meaning, Quality of Life, Participation, and Daily functioning. **[5]** Additionally, assessments were carried out using the Utrecht Coping List (UCL) to evaluate coping mechanisms and the Pleasant Activity List (PAL) to gauge physical activity levels. **[6-7]**

The initial MANSA score 68 indicated average satisfaction levels, which increased to 76 four months after admission, reflecting an overall improvement across assessed dimensions. Similarly, the 'Positive Health' questionnaire revealed enhancements in body functions, mental well-being, meaning, and quality of life at the four-

month follow-up, with daily functioning maintaining a consistently high score. At the same time, participation slightly decreased, reflecting the patient's contentment with her choices.

'The House' assignment unveiled numerous smoke-free areas within the patient's residence, indicative of positive changes in smoking behavior. The UCL highlighted an active coping style characterized by comforting thoughts, although a less utilized coping strategy was identified in seeking support. The identification of emotional escape strategies such as numbness contributed to physical issues, while the PAL indicated engagement in 47 out of 72 pleasurable activities, guiding the development of a comprehensive relapse prevention plan. Normalization of caffeine and sugar intake was observed and maintained throughout the inpatient and later outpatient periods. Despite reporting pain from whiplash, the patient found relief with the prescribed pain medication. The inpatient tobacco detoxification was completed. During her stay in our clinic, she completely abstained from tobacco use for the first time since she started smoking at the age of 13.

Overall, the assessment period's outcomes reflect significant improvements in various dimensions of the patient's well-being, underscoring the potential effectiveness of the residential treatment program.

Timeline

Follow-up appointments at 2 and 3 weeks and 2 and 4 months after discharge revealed ongoing challenges in maintaining complete abstinence from smoking, particularly during stressful work situations. Despite occasional lapses, the patient remains highly motivated. Stress and guilt associated with smoking do not trigger further smoking episodes; instead, the patient has developed alternative coping mechanisms, effectively breaking the cycle of smoking and stress. On a gynecological level, complete health was achieved three months after admission for smoking cessation and four months post-operation to remove abnormal cervical cells. Follow-up will now transition to population screening rather than specific gynecological assessments.

This represents a significant step forward in the journey towards a smoke-free life. Monitoring and support will sustain these positive changes and promote long-term recovery.

Patient perspective

During residential treatment, the patient frequently reported craving tobacco. Specifically, she felt a sense of unease about not being able to bid farewell properly to her last cigarette. Her last smoking experience felt hurried and not memorable. Additionally, she reported dreaming about smoking the last cigarette. Despite these feelings, she refrained from acting on them. These feelings were extensively discussed with her caregivers, leading to the realization that she needed a symbolic farewell to her smoking habit. Therefore, upon returning home, she purchased one last pack of cigarettes, lit one cigarette, and allowed it to burn out completely. Consequently, she likely experienced some passive exposure to smoke through inhalation. This farewell ritual with her daughter notably reduced her craving for tobacco.

Discussion

This case report explores and illustrates the promising potential of residential cessation treatment as an innovative approach to tackle patients suffering from severe TUD with severe tobacco withdrawal syndrome. The patient's journey demonstrated remarkable positive transformations, with improvements in satisfaction levels, as indicated by the MANSA questionnaire, and enhanced well-being across various dimensions, as evidenced by the 'Positive Health' questionnaire. Notably, the positive impact of residential treatment on satisfaction and health outcomes is evident. The primary focus of this case report was on positive health as an outcome measure, specifically in the context of smoking cessation. Positive health extends beyond the absence of disease, encompassing well-being in all aspects of life. It includes not only physical health but also psychological, social, spiritual, and societal well-being. By emphasizing positive health as a measurable outcome in the context of smoking cessation, the goal is to gain a comprehensive understanding of health and develop more effective strategies to enhance the well-being of those quitting smoking. **[5]**

In comparison to outpatient settings, residential programs offer distinct advantages. Patients benefit from a controlled environment, intensive, multidisciplinary care, and convenient access to a healthcare team. Evidence supports that more intensive smoking cessation approaches involving frequent physician visits and pharmacotherapy are not only cost-effective but also lead to superior outcomes. **[8-10]** Residential treatment provides a smoke-free environment crucial for those in the early days of abstinence experiencing severe tobacco withdrawal symptoms, minimizing relapse risks. **[11]** It offers readily accessible social support, enhancing the quitting journey. Residential therapy allows for personalized treatment, if applicable, including adjusting nicotine doses and closely monitoring medication use. Also, comorbid complaints and diseases can be quickly managed. The inclusion of complementary therapies like physical activity and stress-management training further enhances the overall approach to smoking cessation in a residential setting.

The challenge of sustaining abstinence is pronounced. In the context of outpatient group therapy, individuals frequently encounter short-lived success, often succumbing to relapse shortly after initiation. This phenomenon underscores the complexities inherent in managing addiction, where factors such as withdrawal symptoms and home environment exert significant influence. In such cases, clinical admission emerges as a strategic intervention to disrupt the initial

detoxification phase, a pivotal juncture in the treatment trajectory. By addressing the immediate challenges associated with withdrawal and providing a structured environment conducive to recovery, clinical admission offers a pathway toward sustained abstinence for a group of patients.

Residential treatment is complex, comprising multiple components that work synergistically to provide a personalized, multidisciplinary approach. The controlled environment, intensive treatments, and regulated social interactions are unique to residential settings. Determining the optimal duration of residential treatment remains unresolved, but the initial week often requires intensive care due to withdrawal symptoms. **[12]** The distinctive characteristic of the residential smoking cessation program appears to be its controlled environment coupled with intensive group and individual treatments. **[13]** Residential treatment plays a crucial role in helping individuals navigate through the critical detox period, as it does with other addictions. A thorough pre-admission treatment and follow-up are inherently crucial for success.

Suggestions for future research include conducting comprehensive evaluations encompassing a broader spectrum of outcomes to assess the impact of residential treatment. This should involve exploring aspects such as quality of life, readiness to change, physical dependence, and the overall influence on adopting a healthier lifestyle (i.e., more physical activity and diet). Consideration of psychosocial factors and mental health aspects, including depression and anxiety, is also crucial in the evaluation process. The multifaceted evaluation underscores the importance of addressing individual coping styles, risk factors, and broader health and lifestyle considerations in the treatment and follow-up. Additionally, future studies should prioritize biochemical verification of abstinence over self-reporting and monitor craving and withdrawal symptoms. Exploring the most optimal duration of residential treatment, identifying the target groups, and understanding the program's composition should be essential in advancing our understanding of effective smoking cessation interventions.

Conclusion

This case report highlights the potential effectiveness of a 10-day residential cessation treatment for a woman with a severe tobacco use disorder with a tobacco withdrawal syndrome, which could not be sufficiently treated in an outpatient treatment program, and gynecological comorbidity. While challenges persist in maintaining complete abstinence, the patient's positive health outcomes underscore the impact of residential treatment. The broader evaluation emphasizes the need for a holistic approach in assessing the efficacy of residential programs for refractory smoking addiction and comorbid conditions, offering valuable insights for further exploration of this treatment option.

Disclosure statement

The authors report no conflict of interest. The authors alone are responsible for the content and writing of this paper.

Consent form

The patient provided written informed consent (uploaded to the electronic medical record) for his hospital course and relevant objective findings to be published in this case report.

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Statement on case report guidelines

This case report was written to adhere to the CARE Case Report Guidelines.

Contribution details

RJLT was directly involved in the care of this patient. RJLT and SKS took the lead in writing this manuscript. RCVDG provided critical feedback and contributed to its writing.

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