

## Paroxetine Treatment of Problematic Pornography Use: A Case Series

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(Received: February 15, 2016; revised manuscript received: May 11, 2016; accepted: May 15, 2016)

**Background:** How best to conceptualize problematic pornography use (PPU) and intervene most effectively remain debated, with obsessive–compulsive disorder (OCD) and addiction frameworks. We investigated the efficacy of the serotonin-reuptake inhibitor paroxetine in combination with cognitive-behavioral therapy in the treatment of problematic pornography use (PPU). **Case presentation:** Three heterosexual males with PPU were treated with cognitive-behavioral therapy and paroxetine. Frequency of pornography use, other sexual behaviors, and anxiety were assessed during treatment. **Discussion:** Paroxetine treatment, although seemingly initially effective in reducing pornography use and anxiety, appeared related to new compulsive sexual behaviors after 3 months. **Conclusions:** Paroxetine may hold promise for short-term reduction of PPU and related anxiety, but new potentially distressing sexual behaviors may emerge. The cases suggest that PPU may arise from multiple domains. We propose an explanation of the effects based on recent neuroscientific research on sexual behaviors and alcohol use.

**Keywords:** problematic pornography use, case series, pharmacotherapy, paroxetine

### INTRODUCTION

About 70% of males aged 18–30 years use pornography weekly (Hald, 2006). While most view pornography without problems, some view compulsively and seek treatment (Gola, Lewczuk, & Skorko, 2016; Gola, Skorko, et al., 2016). How best to conceptualize problematic pornography use (PPU) and intervene most effectively remain debated, with obsessive–compulsive disorder (OCD) and addiction frameworks (Gola, 2016; Kor, Fogel, Reid, & Potenza, 2013; Kraus, Voon, & Potenza, 2016; Prause, Steele, Staley, Sabatinelli, & Hajcak, 2016). Paroxetine, due to its efficacy in OCD and anxiety disorders (Stein, Andersen, Tonnoir, & Fineberg, 2007) and negative impact on libido (Abler et al., 2011), has been used in PPU treatment. Here, we report three cases where paroxetine treatment, although seemingly initially effective, after 3 months appeared related to new compulsive sexual behaviors. We place these findings within the context of neuroscientific research on compulsive sexual behaviors and alcohol use.

### CASE REPORTS

Patients were Caucasian, heterosexual males [measured with the Polish adaptation of Kinsey’s Sexual Orientation Scale (Wierzba et al., 2015)] seeking treatment for PPU accompanied by compulsive masturbation (characteristics in

Table 1). None took medication, had significant medical problems or histories of risky sexual behaviors, use of paid sexual services or affairs. All reported some risky alcohol drinking. Two had episodes of depressive disorder at ages 18 (Mr. A) and 24 (Mr. C) years, respectively. All reported preoccupations/urges, numerous failed quit attempts, and significant distress related to PPU and masturbation.

Patients attended cognitive-behavioral therapy delivered by doctoral-level clinical psychologists and completed self-monitoring reports of pornography consumption (daily) and anxiety (weekly; Figure 1).

All patients were asked about sexual dysfunction related to the medication and reported decreased libido and delayed ejaculation during the initial 2–4 weeks of paroxetine intake (20 mg/day). Within 10 weeks from the onset of paroxetine treatment, reported libido was close to the normal and patients A and B did not experience any difficulties in erection or ejaculation during sexual activity with their partners or during solitary sexual activity (patient C had only solitary sexual activity and also did not report experiencing any troubles). Within the 10 weeks of paroxetine intake, all patients also experienced significant

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Table 1. Characteristics of patients

Patient	A	B	C
Age	24	32	35
Relationship status	In relationship for 3 years	Married for 6 years	Single
Occupation	Student	Manager	Software developer
Onset of pornography use (age in years)	11	14	13
Pornography use/week	12 hr	8 hr	6.5 hr
Frequency of masturbation/week	18	8	13

decreases in self-reported anxiety [A: 45%; B: 50%; C: 49%;  $M_{\text{before}} = 7.03$ ;  $SD = .38$ ;  $M_{\text{after}} = 3.66$ ;  $SD = .4$ ;  $t(2) = 90.7$ ; and  $p < .001$ ]. Similarly, frequency of pornography consumption decreased, albeit not to a statistically significant level [A: 80%; B: 69%; C: 52%;  $M_{\text{before}} = 7.57$ ;  $SD = 2.46$ ;  $M_{\text{after}} = 2.25$ ;  $SD = .28$ ;  $t(2) = 3.78$ ; and  $p = .078$ ]. Interestingly, within 12–14 weeks, new sexual behaviors appeared. Patients A and C started engaging in paid sexual relations (up to three times a week), and patient B initiated an extra-marital affair (with his children’s care provider). After 13 weeks of treatment, patient C went on vacation during which he engaged in an almost 2-week-long paid sexual relationship and quit medication. Due to those new behaviors, all patients were evaluated for mania/hypomania according to the criteria presented by Basco and Rush (2005). Patients A and B were assessed for symptoms of mania for three consecutive weeks and patient C for two consecutive weeks. None of the patients met criteria for mania or hypomania. Interestingly, all of the new sexual behaviors had a dyadic characteristic and

were not accompanied with rebound of pornography use and masturbation.

The appearance of new sexual behaviors was discussed with patients during the meetings. Patient C reported the use of paid sexual services as having ego-syntonic elements. In his words, a vacation with paid “girlfriend-like-experiences” was one of the best times of his life. Patient C declared that he always preferred dyadic sexual activity over solitary activity, but due to high anxiety level and difficulties in creating intimate relationships with women, he was more prone to use pornography and masturbate. Patients A and B had very strong religious-based beliefs that extra-marital sexual relationships are morally reprehensible. In the case of patient A, his first use of paid sexual services was described as having a mixture of pride and guilt. Patient A described that he always wanted to have sexual experience with prostitute but was afraid to try. He also wanted to see what it was like to have sex with another person other than his girlfriend (who was his first sexual partner). His guilt was related to feeling that he was cheating on his girlfriend in a manner not consonant with his religious beliefs. A mixture of pride regarding sexual initiation and engagement and guilt related to a mismatch of this behavior with his religious beliefs was present during his sexual encounters. Patient B also described his extra-marital affair as being characterized by feelings of both pride and guilt. As in the case of patient A, his wife had been his first and only sexual partner (with the sexual initiation age of 20 years), and the drive for the affair involved fascination and a desire “to try something new.” As patients A and B perceived the new behaviors as being contrary to their beliefs, yet nonetheless reported strong motivations to continue the behaviors, paroxetine treatment was stopped. In the following weeks, Mr. B reported ending his extra-marital relations, while Mr. A and Mr. C continued engaging in paid sexual services (about once a week). None of the patients were interested to increase the amounts of pornography use and frequency of masturbation (instead of the use of paid sexual services), as they were describing the pornography use as isolating, time

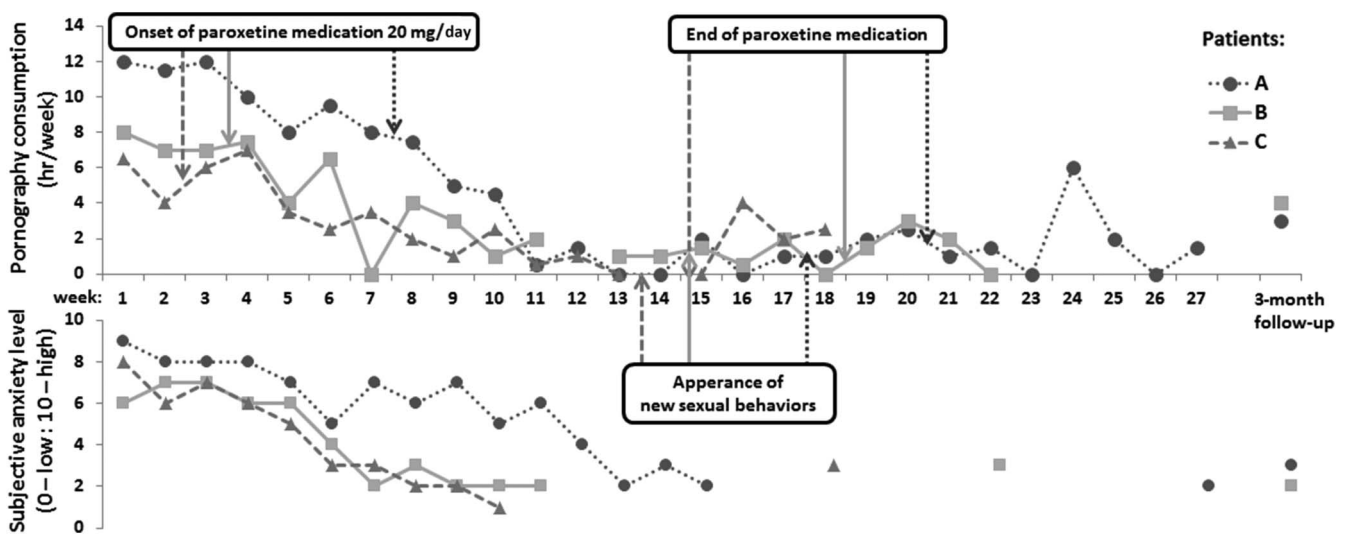


Figure 1. Top: weekly amount of pornography consumption with marked onset and end of paroxetine intake for each subject and onset of new sexual behaviors appearance. Bottom: weekly rating of anxiety level

consuming and humiliating. Diminished pornography consumption was sustained through the 3-month follow up for Mr. A and Mr. B (Mr. C did not follow up). Subsequently, Mr. A has reported ending his 3-year relationship with his girlfriend as he had learned that she had been cheating on him with her ex-partner.

## DISCUSSION AND CONCLUSIONS

These cases highlight several important points. In the 1990s, Dr. Coleman proposed that compulsive sexual behaviors may be driven by anxiety-reduction mechanisms (Coleman, 1991). Our results are in line with Dr. Coleman's observation that PPU may be related to anxiety as both pornography use and anxiety decreased with paroxetine treatment. Second, while paroxetine may hold promise for reducing PPU and related anxiety, new potentially distressing sexual behaviors may emerge. There are several possible explanations for these observations: (a) new sexual behaviors may be one symptom of subthreshold hypomania (Fiedorowicz et al., 2011); (b) paroxetine treatment or refraining from PPU may have compelled patients to pursue higher risk sexual behaviors; (c) patients may have experienced sexual dysfunction and may have sought more risky or arousing experiences; or, and (d) in line with recent neuroscientific findings (Gola, Miyakoshi, & Sescousse, 2015; Gola, Wordecha, et al., 2016; Victor, Sansosti, Bowman, & Hariri, 2015) and older clinical observations (Coleman, 1991, 2015), PPU may arise from multiple domains (e.g., with anxious and reward-related/impulsive components), and paroxetine treatment may target only anxiety-related aspects.

Our data do not provide convincing support for the first three possibilities. Frequently endorsed symptoms of hypomania, such as unusually high energy, decreased need for sleep, increased goal-directed activity, grandiosity, or expansive mood were not observed (Fiedorowicz et al., 2011). The new sexual behaviors had a dyadic characteristic and were not accompanied by rebound of PPU and solitary sexual activity, thus not providing strong support for the second possibility, although it cannot be completely excluded. If patients were pursuing more risky or arousing sexual behavior to overcome sexual dysfunction, we might anticipate increases in time spent viewing pornography and masturbating and new content of pornography being viewed within the first weeks of paroxetine treatment. We did not observe these patterns. Furthermore, prior to the emergence of new problematic sexual behaviors, patients were reporting the return of normal sexual functioning, suggesting that the new behaviors were not compensatory to sexual dysfunction. A possibility that fits with the data and warrants additional study relates to a theory described elsewhere (Gola et al., 2015) in response to a recent research by Nikolova et al. on risky alcohol drinking (Nikolova, Knodt, Radtke, & Hariri, 2015) and Victor et al. on risky sexual behaviors (Victor et al., 2015). Both theories propose that imbalances in ventral-striatum-related reward reactivity and amygdala-related threat reactivity may promote problematic-alcohol drinking (Nikolova et al., 2015) or sexual risk taking (Gola et al., 2015; Victor et al., 2015). Problematic behaviors may result from increased impulsivity (related to

ventral-striatum-related reward reactivity) or increased anxiety (related to amygdala-related threat reactivity). Previous studies show that anxiety may be diminished with paroxetine, which has been linked to reductions in amygdala's volume (Szeszko et al., 2004), while other medications such as naltrexone may reduce reward responsiveness (e.g., craving) and impulsivity (Bostwick & Bucci, 2008; Raymond, Grant, & Coleman, 2010; Kraus, Meshberg-Cohen, Martino, Quinones, & Potenza, 2015). Therefore, we hypothesize that in PPU, both of the above-mentioned mechanisms may operate, and this possibility warrants additional investigation. Although currently speculative, we may explain the observations in this case series as follows. All three patients had an initially high level of anxiety (as presented in Figure 1) and PPU may have helped them regulate their anxiety. Paroxetine may have helped to decrease amygdala-related reactivity, resulting in decreased anxiety and subsequently decreased PPU. However, at some point, without targeting craving or reward-related processes, new compulsive sexual behaviors may have emerged in the setting of diminished anxiety. While such mechanisms appear to have support from experimental studies on sexual behaviors and problematic alcohol use (Gola et al., 2015; Nikolova et al., 2015; Victor et al., 2015), they deserve further investigation in PPU. We are aware that there exists a big leap from three cases to neuronal mechanisms; however, at the level of symptoms, the accounts of these three individuals suggest that anxiety, and reward-related processes may both warrant strong consideration in the treatment of PPU and perhaps other compulsive sexual behaviors. Therefore, future clinical trials should consider combinations of paroxetine and naltrexone with careful assessment of sexual behaviors and individual-difference measures (e.g., impulsivity and anxiety) that may relate to treatment outcome.

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*Funding sources:* This case report was supported by the Polish National Science Centre, OPUS grant, number 2014/15/B/HS6/03792 (M. Gola). M. Gola was also supported by Polish Ministry of Science scholarships (1057/MOB/2013/0 and 469/STYP/10/2015) and scholarship from Start of Foundation for Polish Science. M. N. Potenza was supported by CASAColumbia and the National Center for Responsible Gaming. The views presented in the article do not necessarily reflect those of the funding agencies and rather reflect those of the authors.

*Authors' contribution:* MG worked with patients, collected clinical data, and performed the statistical analysis. MG and MP analyzed the findings, interpreted them, and wrote the manuscript.

*Conflict of interest:* The authors report no conflict of interest with respect to the content of this manuscript. Dr. M. N. Potenza has consulted for and advised Ironwood, Lundbeck, INSYS, Shire, RiverMend Health, and Opiant/Lakelight Therapeutics; has received research support from Mohegan Sun Casino, the National Center for Responsible Gaming, and Pfizer; has participated in surveys, mailings, or telephone consultations related to drug addiction, impulse-control disorders, or other health topics; has consulted for

gambling and legal entities on issues related to impulse-control and addictive disorders; provides clinical care in the Connecticut Department of Mental Health and Addiction Services Problem Gambling Services Program; has performed grant reviews for the National Institutes of Health and other agencies; has edited journals or journal sections; has given academic lectures in grand rounds, CME events and other clinical or scientific venues; and has generated books or book chapters for publishers of mental health texts.

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