CHYĆKO, Małgorzata, CZARNOTA, Julia, CICHOŃ, Katarzyna, KROMER, Agata, ŁAPAJ, Monika, ZAPAŁA, Magdalena Alicja, ŚRODOŃ, Agnieszka, CHOLEWA, Małgorzata Maria, GAWRYŚ, Agnieszka and WILK, Joanna. The influence of bipolar disorder medication on sexual performance. Journal of Education, Health and Sport. 2023;42(1):46-51. eISSN 2391-8306. DOI http://dx.doi.org/10.12775/JEHS.2023.42.01.004
https://apcz.umk.pl/JEHS/article/view/43964
https://zenodo.org/record/8086502

The journal has had 40 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of December 21, 2021. No. 32343.
Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical Culture Sciences (Field of Medical sciences and health sciences); Health Sciences (Field of Medical Sciences and Health Sciences).
Punkty Ministerialne z 2019 - aktualny rok 40 punktów. Załącznik do komunikatu Ministra Edukacji i Nauki z dnia 21 grudnia 2021 r. Lp. 32343. Posiada Unikatowy Identyfikator Czasopisma: 201159.
Przypisane dyscypliny naukowe: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu).

The authors declare that there is no conflict of interests regarding the publication of this paper.
Received: 12.05.2023. Revised: 15.06.2023. Accepted: 25.06.2023. Published: 29.06.2023.

The influence of bipolar disorder medication on sexual performance

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Abstract:

Sexual performance is one of the key aspects of good quality of life, both in healthy people and patients suffering from various mental disorders. Besides many reasons causing poor sexual performance, like mental condition itself, medication can alter one's ability to achieve satisfaction in sex. Sexual dysfunction is listed among one of side effects of psychotropic medications. Aim of this work is to determine an influence of pharmacotherapy on sexual function in patients with bipolar disorder.

Results:

Pharmacotherapy in patients suffering from bipolar disorder can cause a multitude of side effects, including malfunction in sexual performance. Extent of severity in poor sexual life depends on many factors among which are: type of drug taken, whether there are one or more drugs taken at the same time. Seems to be observed that quetiapine shows the least negative effect on sexual performance. Additionally, highest risk of sexual malfunction is observed in patients with polytherapy.

Conclusion:

Besides topics investigated in the following research, there are additional factors like duration and severity of the disease, gender and age. There are many variables needed to be taken into consideration, but there is potential of choosing proper medication for a patient with least possible side effects and to allow them to perform more successful sex life, which directly corresponds with better quality of life.

Keywords: sexual funcion, sexual dysfunction, lithium, valproate, lamotrigine, quetiapine

Bipolar disorder (BPD) is a recurrent and chronic disorder that is characterized by alternate occurrences of elevated mood and depressive episodes, together with altered activity level. Elevated mood episodes are defined as manic episodes, whose intensity differs between bipolar disorder types [1]. Types of bipolar disorder differ mostly by severity of manic episodes, which - less severe - in BPD type II are called hypomania, whereas in BPD I more intensified manic episodes. [1] Due to the fact that different medications are used in different phases and severity of disease more than BPD type, medications that were proven to have influence on sexual performance in holistic treatment of bipolar disorder will be investigated.

In the course of affective disorders, sexual dysfunction may appear. [2, 3] According to Dell'Osso et al. (2009) comparing 142 patients (60 with BD and 82 with unipolar depression) with 101 healthy controls, patients with BD reported more sexual dysfunction compared to healthy control persons. Patients with BD had increased sexual desire in comparison with patients with unipolar disorder. [4] A Dutch study in the general population of the Netherlands showed an association between BD and sexual dissatisfaction. [5] As within BPD life-threatening states may occur, sexual dysfunctions are often marginalized. [6] As sexual performance has a great impact on general life satisfaction, it is important to investigate the following topic to provide patients with holistic support concerning their disease.

Treatment of bipolar disorder focuses on two goals - separately management of depressive and manic episodes. Effects of those drugs will be investigated in two separate groups.

Manic phase of bipolar disorder is associated with an increased sex drive and difficulty in controlling this drive. Goal of medication concerning the manic phase of BPD is to lower this increased drive and to regain control over them. It consists in taking, for both acute and long-term management, traditional mood stabilizers (lithium or valproate) and atypical antipsychotics (APA - olanzapine, risperidone, aripiprazole and quetiapine). [7]

First on the list of medications seemingly having influence on sexual performance is one of the longest-used and widest-spread medications used for management of manic phase during BPD - lithium. According to Grover et al. (2014) up to 30% of patients being treated with lithium reported erectile and/or sexual dysfunction. [8] Unfortunately, the precise mechanism of this effect has not been stated. Some additional traits characterizing patients with sexual problems while being treated with lithium were: older age, other additional negative side effects of lithium intake, lower level of functioning (measured on Global level of functioning score) and poor medication compliance. [8] In contrast to undefined mechanisms, another study suggests that negative effects on sexual performance in patients under lithium medication might originate from lowered testosterone levels and impaired relaxation of cavernosal tissue due to the nitric oxide production. [9] Both of those studies conclude that lithium intake has a negative influence on sexual performance of patients suffering from BPD under medication of this particular drug. [8, 9].

Second medication mentioned on the list of manic-phase management of bipolar disorder is valproate. According to Grover et. al. (2021) who performed a study on patients taking valproate in monotherapy, almost 30% of patients showed dysfunction in sexual performance. Problems varied in range - up to 35% of patients evinced issues with sexual drive (7 timer more often in females). Erectile dysfunction was observed in up to 1/3 of males and difficulty in vaginal lubrication was reported by 1/4 of females. [10] Besides

observations stated above, important correlation was stated. Grover et. al. (2021) observed that the presence of sexual dysfunction in patients is directly related to the length and severity of their primary condition - bipolar disorder. Researchers concluded that the longer duration and severity of BPD symptoms, the higher the probability of suffering from sexual dysfunction. This observation might impose the thesis that not medication itself might be the cause of poor sexual performance, but the BPD itself. However, in the study mentioned above another aspect was observed. Patients who reported biggest problems in the sexual sphere were also the ones who suffered the highest side effects from medication they were on. [10] This aspect may suggest that they had the biggest sensibility to medication and sexual performance might have been altered due to the valproate intake.

In contradiction to analyzed above manic phase, comes depressive episodes management in bipolar disorder. Most commonly used drugs in the depressive phase of BPD are lamotrigine and quetiapine.

Multiple researches were conducted, showing the sexual malfunctions in patients under medication of lamotrigine, but suffering from epilepsy. The same drug is used in management of BPD and seizure attacks. These researches showed clear influence of lamotrigine on lowering sexual drive and erectile functions, which indicates the possible effect of medication on sexual performance. However, this study focuses on investigation of drugs used within bipolar disorder specifically. Even though the medication used was the same, the control group suffered from different conditions and those studies won't be cited. Above information was evoked to underline the extent to which lamotrigine can influence patients' sexual sphere. Fortunately, one study was performed on females suffering from BPD while taking lamotrigine, who were additionally diagnosed with female genital disorder. According to Erfurth et. al. (1998) lamotrigine use is directly linked to inadequate genital response while exposed to stimuli that should cause arousal. Within this study females under a dose of 400mg of lamotrigine were investigated. This effect was induced with highest probability by high doses of lamotrigine and its serotoninergic side effect. [12]

Second medication used in management of depressive episodes in bipolar disorder is quetiapine. This drug seems to be standing out among medications listed above. According to the Nagaraj et. al. (2009) quetiapine has the lowest risk of causing sexual dysfunction among all the antipsychotics. Sexual dysfunction occurrences for the medication groups using different medications were: 96% for risperidone, 90% for olanzapine and 88% for quetiapine. However, there was statistically no significant difference across the study groups although it was relatively less with quetiapine. [13]. Thesis stated above, as quetiapine might have less influence on sexual dysfunction in patients is also supported by Kasper, S. (2003). Researcher observed that patients treated with quetiapine (atypical antipsychotic drug) in contradiction to typical antipsychotic drugs, are less prone to negative side effects such as extrapyramidal symptoms, sexual and menstrual dysfunction. [14]

Most commonly during management of BPD drugs listed above are not taken in monotherapy. They are usually mixed based on symptoms and severity of the disease. One study performed by García-Blanco et. al. (2020) indicates the differences of sexual malfunctions in patients combining different drugs from the ones listed above. Researchers investigated sexual performance of patients with at least 6 months of euthymia (stable mental state). Patients were divided in groups treated with (i) lithium alone (L group); (ii) anticonvulsants alone (valproate or lamotrigine; A group); (iii) lithium plus anticonvulsants (L+A group); or (iv) lithium plus benzodiazepines (L+B group). Results showed that A group had better total sexual function than the L group and the L+B group. Relative to the A group, the L and L+B groups had worse sexual desire. The L group had worse sexual arousal; and the L+A group and the L+B group had worse sexual orgasm. [15] This can be concluded that

polytherapy has more negative influence on sexual performance, than taking valproate or lamotrigine alone (A group).

It is clearly seen that drugs commonly used in treatment of bipolar disorder might cause sexual dysfunction. Despite differences in sexual drive among manic and depressive phases of BPD, drugs from both groups can cause the same difficulty in sexual performance, including lower sex drive and possibility to achieve orgasm. Additionally, polytherapy seems to have a stronger negative effect on sexual function in patients.

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