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Pregnancy as a challenge for a patient with schizophrenia

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Abstract

Introduction: Schizophrenia affects as many as 24 million people worldwide. Similar to the general population of women, it is estimated that every second woman with schizophrenia becomes a mother. The purpose of the article is to present the difficulties that pregnancy brings for women with schizophrenia in terms of physical and mental health and the course of the disease.

Material and methods: The available literature in English and Polish languages was reviewed by searching the PubMed and Google Scholar databases. Articles published from 2009 to 2023 were selected using the following words: schizophrenia, pregnancy, hormones, treatment and outcomes. The analysis encompassed original studies, meta-analyses, randomized controlled trials, and review articles.

Results: One of the most significant problems related to motherhood among patients with schizophrenia is the lack of access to knowledge about family planning, sexuality and parenting. Women with schizophrenia are more likely to engage in risky sexual contact, and usually their pregnancies are unplanned. The influence of schizophrenia on the course of pregnancy is still not clear. Studies show that changes in hormone levels during pregnancy, especially estrogen levels, play a protective role in the occurrence of schizophrenic episodes. Nonetheless, pregnant women with schizophrenia have higher risk of miscarriage, infant deaths, obesity, gestational diabetes, hypertension and other obstetric complications.

Conclusions: Due to the fact that nowadays more women with schizophrenia may become mothers, it is crucial to provide patients with adequate knowledge about sexual and reproductive life and to ensure them professional, interdisciplinary medical and psychological care during pregnancy.

Keywords: schizophrenia, pregnancy, hormones, treatment, outcomes

Streszczenie

Wstęp: Na schizofrenię choruje 24 miliony osób na całym świecie. Analogicznie jak w populacji ogólnej kobiet, co druga pacjentka cierpiąca na schizofrenię zostaje mamą. Celem niniejszego przeglądu jest przedstawienie trudności jakie niesie za sobą ciąża dla kobiet chorujących na schizofrenię, w zakresie zdrowia fizycznego i psychicznego oraz przebiegu choroby.

Materiał i metody: Przegląd literatury został przeprowadzony poprzez wyszukiwanie artykułów w języku angielskim i polskim w PubMed, Medline i Google Scholar, opublikowanych w latach 2009-2023. Podczas selekcji wykorzystano następujące słowa kluczowe: schizofrenia, ciąża, hormony, leczenie oraz powikłania. Analiza obejmowała badania oryginalne, metaanalizy, randomizowane badania kontrolowane i artykuły przeglądowe.

Dyskusja: Jednym z najistotniejszych problemów związanych z macierzyństwem wśród pacjentek ze schizofrenią jest brak dostępu do wiedzy na temat seksualności, planowania rodziny oraz macierzyństwa. Z tego względu kobiety cierpiące na

schizofrenie częściej podejmują ryzykowne zachowania seksualne a ich ciąże zazwyczaj są nieplanowane. Wpływ choroby na przebieg ciąży nie jest w pełni poznany. Badania wykazały, że zmiany poziomu hormonów podczas ciąży, w szczególności poziomu estrogenu, pełnią role protekcyjną w występowaniu epizodów psychotycznych. Mimo to kobiety chorujące na schizofrenie mają większe ryzyko poronień, śmierci noworodków, otyłości, cukrzycy ciążowej, nadciśnienia oraz innych powikłań położniczych.

Wnioski: Ze względu na fakt, iż coraz więcej kobiet chorujących na schizofrenie zostaje matkami, kluczowe jest, aby przekazywać im odpowiednią wiedzę na temat życia seksualnego i reprodukcyjnego oraz zapewnić profesjonalną i wielodyscyplinarną opiekę medyczną i psychologiczną podczas ciąży.

Słowa kluczowe: schizofrenia, ciąża, hormony, leczenie, powikłania

Introduction

Schizophrenia is a long-term mental illness belonging to psychotic states that impairs the correct perception of reality and disrupts social interactions [1]. According to the World Health Organization, 24 million people worldwide suffer from schizophrenia, slightly less than half of whom are women and a high proportion of them already have or will have children [1,2]. The ethology of schizophrenia is multifactorial, involving genetic conditions, environmental factors and life experience [3,4]. The disease is usually diagnosed in the period from late adolescence to early adulthood, after the first episode of psychosis [3]. Furthermore, the incidence peak of the illness is recorded twice in women aged 20-30 and 30-39, what covers the childbearing period [2]. The occurrence of psychotic symptoms is often preceded by changes in personality, behaviour or functioning, called the prodrome of schizophrenia [3,5]. The symptoms of schizophrenia include cognitive symptoms, such as deficits in memory, attention and organization, as well as disturbances in the ability to perceive stimuli, positive symptoms including hallucinations, delusions or speech disorders and negative symptoms such as social withdrawal, inability to feel pleasure or lack of interests [1,3,6]. Due to the above symptoms, pregnant women with schizophrenia face many problems. They are more likely to smoke, use alcohol and illicit drugs, which is associated with a negative impact on the development of the fetus [7]. In addition to the physical condition during pregnancy and perinatal complications, women with schizophrenia are also afraid of the stability of their mental health. They struggle with a fear of the possible effects of their illness on their children, the influence of treatment as well as with facing social stigma [8]. However, increasing knowledge about the disease and using effective treatment have resulted in a significant improvement in the quality of life of people suffering from schizophrenia. Research shows an increasing number of women with schizophrenia getting pregnant and predicts that their number will increase [9]. The aim of this article is to systematize the current knowledge about the influence of schizophrenia on preparation for motherhood, the course of pregnancy and perinatal and postnatal complications.

Methods

The available literature was reviewed using PubMed and Google Scholar databases in January 2024. Articles published from 2009 to 2023 were selected using the following keywords: schizophrenia, schizophrenia spectrum disorders, pregnancy, hormones, treatment and outcomes. The analysis encompassed original studies, meta-analyses, randomized controlled trials, and review articles in English and Polish languages.

Results

1. Sexual and reproductive health

The sexual and reproductive health of women suffering from schizophrenia is influenced by cultural, psychological and social factors. The most important of them are cultural factors, understood as the perception of women with schizophrenia as members of society. A significant problem for women with schizophrenia spectrum disorders (SSD) is the lack of access to knowledge about family planning, sexuality and parenting. According to a study conducted in Ethiopia, women who suffered from mental disorders were not provided information about family planning. Another research found that health care facilities, including psychiatric centers, did not inform young women suffering from psychosis about reproductive and sexual health [10]. The reason may be the fact that people diagnosed with schizophrenia are often perceived as incapable of sexuality, partnership or parenthood, and the manifestation of their needs in this area is treated as a functioning disorder [11]. The effects of these cultural beliefs have been described in research. The study involved 62 young people suffering from psychosis. It was found that their knowledge about unsafe sexual

behaviour and sexually transmitted diseases was low [12]. Psychological factors are manifested by lack of self-confidence as well as fear and uncertainty in interpersonal contacts. Tsirigotis and Gruszczyński showed that people with schizophrenia were less interested in sexual relationships compared to healthy people. Furthermore, it has been shown that, among people suffering from mental disorders, patients with schizophrenia were least likely to experience sexual relationships [11]. The reason for this may be the occurrence of the first psychotic episode and the development of sexuality in a similar period of life. The appearance of an episode may cause fear of sexual experiences and delay their onset. This will lead to the inability to establish sexual contacts and a feeling of incompetence [13]. Side effects of antipsychotic drugs are another important issue. Weight gain, slowness, changes in facial expressions and muscle stiffness may cause patients to perceive themselves as less attractive, which may lower their self-esteem and cause them to neglect their social life [10,11]. Other essential aspect is the social relations of women suffering from schizophrenia. Patients with psychotic disorders experience difficulties in establishing social relationships [13]. The most important cause is the impairment of social and mental functions resulting from the course of the disease, causing numerous symptoms, such as reduced emotional expression, reduced motivation, reduced number of interests, uncontrolled behavior, anhedonia and distrust, which undoubtedly make it difficult to create relationships [10,11]. The study found that 56% of 137 patients diagnosed with schizophrenia or schizoaffective disorder reported that they had never been in an intimate relationship [11]. According to data, 64% of people suffering from psychotic disorders declare that they are dissatisfied with their sex life [13]. Unmet sexual and reproductive health needs may result in an increase in the tendency to risky sexual behaviours, such as failure to use contraceptives, sexual intercourse under the influence of alcohol or psychoactive substances, or contacts with multiple sexual partners. It has been shown that patients with schizophrenia are more likely to engage in unsafe sexual behaviour [12,14]. A clinical study found their prevalence among this group to be 39.4% [14]. The research showed that 38% of patients with psychosis had never used condoms, compared to 21% of healthy people of their age [12]. Another study conducted in Australia found that two thirds of patients after the first episode of psychosis used condoms irregularly, and the rest did not use them at all. Moreover, due to the symptoms of the disease, women often forget to use contraceptives, the effectiveness of which depends on systematic use [10]. All these factors have an undeniable negative impact on the sexual and reproductive health of women with schizophrenia, making it difficult for them to have conscious motherhood.

2. Psychological aspects of pregnancy

Pregnant women with schizophrenia face many challenges, such as uncertainty about the impact of the disease on pregnancy, complex medication decisions and social stigma, including the one in healthcare settings. Moreover, due to more frequent engagement in risky sexual behaviours, women with schizophrenia are at a higher risk of unplanned pregnancies. In a clinical study conducted by Adan Sanchez et al., it was shown that among all pregnancies of women with psychosis who participated in the study, as many as 95% were unplanned [12]. These factors can be related to the fact that patients with schizophrenia spectrum disorders are more likely to terminate their pregnancies compared to healthy women [15]. Most individuals with mental illness can make their own decisions; however, if they lack this capacity, the difficult choice to terminate or continue the pregnancy is made by family members or the therapeutic team [16]. For the women who decided to maintain pregnancy, the great fear about motherhood is the influence of their disease on the course of pregnancy and the health of their child. First of all, women are afraid of the negative impact of antipsychotic drugs. They are also afraid of the stability of their mental health, which is necessary to properly take care of a newborn. This leads to the fear of potentially losing custody of the child and is often accompanied by fear of the heritability of mental illness [15,17]. There is also a risk of deterioration in their mental health. Some cases of delusional denial of pregnancy have been reported among women with schizophrenia. Women with delusional denial do not recognize the signs and symptoms of pregnancy even after medical confirmation of the presence of a fetus. If these delusions persist after the baby is born, mothers may even be dangerous to their baby, so it is important to control patients' conditions and to provide appropriate treatment for them [18]. Women with schizophrenia usually required more visits to both maternity and psychiatric clinics [19]. In one cohort study, researchers found that almost a quarter of the pregnant women with schizophrenia in their study were hospitalized for inpatient psychiatric care during their pregnancy. This may suggest that mental illness was uncontrolled, or insufficiency controlled [7]. However, some studies indicates that, with provided practical and emotional assistance, many women diagnosed with schizophrenia can effectively assume the role of mothers.

3. Biological aspects of pregnancy

3.1. Hormones

Pregnancy is a natural physiological statement with hormonal and metabolic changes that helps the proper

growth of the fetus. Estrogen plays a very important role in the normal development of pregnancy [20]. This female sex hormone helps to promote the growth and development of the fetus, including the evolution of the respiratory and digestive system and also helps to maintain the health of the placenta [21]. Through its effects on the central nervous system (CNS), estrogen modulates important pathophysiological pathways in schizophrenia. It regulates dopamine activity, mitochondrial function and the stress response system. This hormone also has an influence on neuronal development, dendritogenesis, synaptic plasticity and neuronal excitability [22,23]. Female sex hormones levels fluctuate over the course of a woman's life and also change during the menstrual cycle as well as during pregnancy. Throughout the time of pregnancy, when estrogen levels in blood are high, reduced recurrence of psychotic episodes rates have been observed [24,25]. The estrogen protection hypothesis, formulated at the beginning of the 1980s, posits that this hormone has neuroprotective effect and worsening of schizophrenia symptoms occurs at times in the cycle when estrogen is low (around menstruation, during late pregnancy, postpartum and in postmenopausal period) [24,26–28]. A meta-analysis conducted in 2020 found that the period before childbirth, but mainly specified after childbirth, which causes a rapid decline in estrogen, is associated with a 23-fold increase in the relative risk of psychotic episodes [27]. Female hormones also affect distribution, metabolism and elimination of antipsychotic drugs. High levels of estrogen increase the free concentration of antipsychotic drugs, allowing them to reach more target receptors. The presence of estrogen at the dopamine receptor site helps slow down the transmission of dopamine. This endocrine hormone also regulates the activity of certain cytochrome P450 (CYP) enzymes that metabolize drugs, thus potentially increasing the levels of some antipsychotic drugs in women. This mainly involves clozapine and olanzapine, which are metabolized by CYP1A2 [29]. To answer the question: What is the effect of estradiol added to antipsychotic treatment in women of childbearing age with schizophrenia – Weiser M. et al. conducted a clinical trial on a group of 200 women with schizophrenia. Participants received a 200-μg estradiol patch or placebo. Results suggest that an estradiol patch added to antipsychotics is effective at improving schizophrenia symptoms for women of childbearing age [30]. Another important hormone which plays a significant role during pregnancy is prolactin. Its high level, especially at the end of pregnancy, leads to a decrease in estrogen levels. Knowing that estrogen plays a protective role in the occurrence of schizophrenic episodes, doctors should focus on minimizing the risk of its deficiency induced by hyperprolactinemia. It involves the use of drugs that do not increase prolactin levels [31,32]. Additionally, consideration should be given to fluctuations in estrogen levels during pregnancy and their effects on the accessibility of antipsychotic medications. Studies have shown that adjusting the dose of medications to estrogen levels throughout pregnancy may be beneficial for both mother and child [31].

3.2. Perinatal complications

Pregnant women with schizophrenia have a higher risk of obesity, gestational diabetes, hypertension and other metabolic dysfunctions. Furthermore, women with schizophrenia are more likely to smoke cigarettes and drink alcohol, which has a negative impact on fetal development, leading to more frequent premature births and perinatal deaths [7]. It has also been reported that women with psychiatric disorders had an increased risk of miscarriage [33]. The register-based national population study among Finnish pregnant women with schizophrenia has shown that among women with schizophrenia, the risk of pathological oral glucose tolerance test, initiation of insulin treatment, fast fetal growth, anemia, hospitalization, hypertension and premature contractions was significantly higher than in non-affected women in control group [19]. It is estimated that about 26.2% of pregnancies in women with schizophrenia are complicated [34]. In a large meta-analysis covering over 40,000 deliveries of women with schizophrenia and over 40 million deliveries of women from the control group, it was found that in addition to the above-mentioned pregnancy complications, women with schizophrenia also have an increased risk of pre-eclampsia or eclampsia, antepartum haemorrhage, threatened preterm labour and premature rupture of membrane [2]. Additionally, schizophrenia itself is associated with low activity of plasminogen activator, which may contribute to a higher rate of complications, such as placental disorders, placental abruption or the occurrence of placenta previa in this group [35,36].

4. Antipsychotic drugs

4.1 Pregnant patients with schizophrenia as a high-risk group

Treating patients with schizophrenia during pregnancy is a challenge for both doctors and the entire medical staff [37]. Unfortunately, there are few guidelines in the literature regarding pharmacological management of patients with schizophrenia during pregnancy, due to the unclear effect of drugs on the developing fetus [38,39]. Many physicians are concerned about the side effects of antipsychotic drugs because they may cross the placenta, potentially causing teratogenic effects on the fetus [16,37]. Patients are also afraid of congenital defects and perinatal

complications [7,37]. Studies have shown that pregnancy in women with psychotic disorders is the main reason for discontinuation of treatment. During the period from 12 months before the pregnancy to the third trimester of pregnancy, there is a decline in the use of antipsychotic drugs by patients [40]. There is a lack of larger clinical studies assessing the safety of antipsychotic drugs during pregnancy.

4.2 Current research on the safety of drugs

A clinical trial examining the effects of maternal use of antipsychotic medications during pregnancy on postpartum neonatal outcomes found that drug-exposed infants had an increased risk of hospitalization and intensive care unit stays. This risk was higher if the patient received treatment late in pregnancy [41]. Available studies draw attention to the risk of metabolic complications, mainly gestational diabetes, when using antipsychotic drugs. A two-fold increase in the development of gestational diabetes was found in women taking treatment compared to patients not using pharmacotherapy [37]. This applies especially to second-generation drugs (SGAs) such as olanzapine, clozapine and quetiapine, which may additionally cause fetal macrosomia [37,42]. One study evaluating the safety of clozapine showed that non-reactive CTG findings were common during pregnancy. Moreover, 89% of newborns, whose mothers used clozapine during the perinatal period, required resuscitation after birth [43]. It has been established that aripiprazole, although it belongs to second-generation antipsychotics, has a better metabolic profile, and during its use the risk of developing gestational diabetes, dyslipidemia and weight gain is lower compared to other SGAs [44,45]. However, lactation failure has been reported with aripiprazole [45]. Long-acting preparations containing aripiprazole (LAI-AP) have great potential. These medications are taken intramuscularly once every 28 days, which ensures a constant level of drugs in the plasma. This results in greater clinical stability, better self-care during pregnancy, and greater autonomy in the perinatal period and while caring for the newborn. Additionally, they have a safe metabolic profile, and previous studies have not shown an increase in the risk of birth defects or perinatal complications when taking them [44]. Other reported possible effects of the use of antipsychotic drugs during pregnancy include an increased risk of caesarean section and preterm birth [37,46,47]. Current research does not confirm an increased risk of developmental defects in patients using antipsychotic drugs during pregnancy [9,37,48].

4.3 Drugs use trends

A clinical study involving 804 pregnant women suffering from psychotic disorders determined trends in the use of antipsychotic drugs in the perinatal period in 2003-2018. It was found that 65% of all patients had at least one antipsychotic prescription filled during pregnancy. Among 529 women, who received treatment in the 12 months before pregnancy, 87.4% filled their prescription during pregnancy, and 63.4% used antipsychotic medications throughout pregnancy. It was also shown that 21.5% of the 279 women, who had not previously undergone pharmacological treatment, purchased their first prescription for antipsychotic drugs during pregnancy [40]. Research to date clearly shows increasing trends in the use of antipsychotic drugs, especially second-generation drugs throughout the time of pregnancy [40,42,46]. In the years 2001-2010, the frequency of their use among all pregnant women increased from 0.4 to 1.3%. The use of first-generation drugs remained unchanged at 0.1% throughout the study period [45,46]. On the other hand, a study conducted in 2003-2018 showed that among women suffering from psychotic disorders, the use of SGAs during pregnancy increased from 15% in 2003 to 53% in 2018. However, decreasing trends in the use of FGAs were observed, the prevalence of which decreased from 64% in 2003 to 21% in 2018 [40]. Additionally, it was shown that quetiapine and aripiprazole were most frequently prescribed to pregnant women [45]. Moreover, it was observed that women suffering from schizophrenia and other ineffective psychoses showed the least tendency to discontinue antipsychotic drugs during pregnancy compared to women affected by other mental disorders [40].

4.4 Electroconvulsive therapy (ECT)

Electroconvulsive therapy (ECT) is a highly effective treatment method for treating major depressive disorder but is less frequently used for psychotic disorders. However, recent studies suggest that ECT can be a valuable approach for various psychotic disorders, including treatment-resistant schizophrenia [49]. The use of this method is considered in pregnant women with serious mental disorders when other treatment methods are ineffective or pose a threat to the fetus. In comparison to other methods, ECT has a clear advantage in achieving relatively fast treatment effects, which may appear later with pharmacotherapy [50]. Over the past 50 years, numerous studies have shown that the use of ECT during pregnancy is also safe. The adverse effects of ECT in pregnant women are comparable to those in the general population, but decision to use ECT requires a careful consideration of the benefits versus the risks of untreated maternal illness and other treatment alternatives. One of the consequences of using this therapy may be the risk of premature contractions or premature birth [51]. Based

on nationwide registries conducted in Sweden, a study was conducted comparing perinatal outcomes in women with mental disorders during pregnancy in patients using ECT and those not using this treatment. It was shown that among the group of 97 women receiving ECT, 14 had a premature birth (14%), while in the Non-ECT pregnant inpatient group, out of 388 women, 35 of them (9%) had a premature birth. Newborns of women from the ECT group obtained lower Apgar scores, which could indicate less healthy infants immediately after birth. Nevertheless, it is important to consider that ECT therapy is generally reserved for women experiencing severe psychiatric disorders, which can themselves contribute to premature delivery or pregnancy complications. What is significant, the response rate after ECT was 75%, similar to matched control group of non-pregnant women (65%) [50]. In Spain, a case was described of a 24-year-old pregnant woman who was treated with clozapine and ECT due to resistant psychosis symptoms and auto aggressive behaviors. Therapy was conducted between weeks 24 and 27 of the pregnancy. After 12 sessions, the patient experienced overall clinical improvement in acute psychotic symptoms, marked by the remission of delusions and a decrease in verbal hallucinations, with no further episodes of self-directed or outward aggression. At 38 weeks, the pregnancy concluded with the vaginal delivery of a healthy baby, with no perinatal complications. The newborn had an Apgar score of 9 at 1 minute, and 10 at both 5 and 10 minutes, weighing 3590 grams. Six months following childbirth, woman maintained both symptomatic and functional remission and had a positive bond with her child [52]. There are still no available protocols or guidelines with clear and objective recommendations for the use of ECT in pregnant patients. To reduce the risk of side effects, it is advisable to properly prepare the patient for ECT and continuously monitor both the mother and the fetus before, after, and sometimes during the procedure [51].

4.5 Treatment guidelines

Women with schizophrenia during pregnancy are undoubtedly a high-risk group [38]. Polish recommendations emphasize that appropriately conducted pharmacotherapy during pregnancy and the perinatal period brings many benefits for both the mother and the child [53]. There are guidelines for the treatment of women with mental disorders during pregnancy and breastfeeding applicable in Poland, the most important of them are presented below [9]. The risks and benefits of pharmacotherapy must be assessed [9,37]. The stage of pregnancy, previous course of the disease, treatment history and its effectiveness, risk of recurrence and individual patient preferences should be taken into account [53]. Treatment may only be initiated if the potential benefits outweigh the potential side effects, taking into account the risks of discontinuing treatment [9,40,54]. It is recommended to discontinue antipsychotic drugs a week before the due date and during the first trimester of pregnancy [9]. It is recommended to use drugs in minimal effective doses, appropriately adapted to the individual stages of pregnancy, and to choose those with the lowest teratogenic potential [7,9,39]. If psychotic symptoms worsen, the patient should be hospitalized. The condition of the mother and the newborn after delivery should be monitored [9]. The Polish Psychiatric Association recommends using the lowest effective doses of medications during breastfeeding and exercising caution in the event of side effects in the child [55]. In each case, multidisciplinary care is crucial, based on cooperation between a gynecologist, psychiatrist, primary care physician and pediatrician, aimed at an individual approach to the patient to reduce potential complications resulting from treatment [9,39].

5. Perinatal pregnancy outcomes

Studies have shown that the rate of preterm births is about 11.4% in case of mothers with schizophrenia, while the rate in women without psychiatric disorders is 6.9% [36]. A meta-analysis of 11 studies focusing on interventions during labor in women with schizophrenia reports that the rate of incidence of cesarean section was 26.0%, and induction of labor occurred in 24.0% of patients [34]. According to the study, women with schizophrenia were more likely to require admission to a high-risk pregnancy care unit as well as their postpartum hospitalization period was prolonged [7]. After delivery, the children of women with schizophrenia also required care in the neonatal intensive care centres more frequently than children of healthy women (26.5% vs. 12.4%) [56]. Compared to women with no psychiatric disorder, neonatal of women with schizophrenia had an increased risk of being small for gestational age below the third percentile. Apgar scores of less than 8 points after 1 minute were given to 19.0% of children of sick mothers and 12.8% of children of healthy mothers, and 5.6% and 3.0% respectively after 5 minutes [36]. After the birth, women with schizophrenia were less likely to have skin-to-skin contact with their infants (65.2% vs. 78.1%) and initiate breastfeeding (38.9% vs. 52.6%) compared to healthy patients. Mothers with schizophrenia were also less likely to report their intention to breastfeed [56]. Due to the fact that after delivery, many changes occur in the mother's body, including hormone levels, the severity of psychotic symptoms may increase. For this reason, women with schizophrenia are statistically more likely to experience postpartum psychosis both immediately after

delivery and after they have already been discharged from the hospital. Additionally, postpartum psychosis is more likely to occur in mothers who have experienced perinatal complications, which is also more common in those with schizophrenia [8,57]. Furthermore, data from Canada reveal that women diagnosed with schizophrenia face an elevated risk of experiencing a subsequent pregnancy within 12 months following the birth of child, compared to women without schizophrenia [35]. Further research is needed to better understand the impact of schizophrenia on the mother and fetus.

Conclusions

Pregnancy in a woman with schizophrenia is undoubtedly a challenge not only for the patient but also for the entire medical staff. Patients are usually not prepared to take on a new role due to lack of knowledge about family planning and motherhood. Pregnancies are diagnosed late and have low attendance rates at medical appointments, and what is more, women often do not stop drinking alcohol and smoking cigarettes. Additionally, both doctors and patients are concerned about the use of antipsychotic drugs during pregnancy. These factors make these pregnancies high-risk due to the large number of possible perinatal and postpartum complications. Due to the increasing number of pregnant women with schizophrenia, medical institutions should focus on increasing knowledge about sexual and reproductive life among this group of women. Interdisciplinary cooperation between medical specialists is necessary to properly prepare a woman suffering from schizophrenia for pregnancy and to provide her with professional perinatal care and long-term postnatal care. It is crucial that more clinical trials are conducted to assess the safety of antipsychotic medications during pregnancy to enable physicians to be confident that they are providing proven and effective treatments for their patients and to ensure that patients are safe when using pharmaceuticals.

Conflict of interest

The authors have declared no conflict of interest.

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