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Impact of Sport on the Course of Endometriosis

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Streszczenie

Endometrioza to powszechna choroba dotykająca około 10% kobiet w wieku rozrodczym, prowadząca do wielu nieprzyjemnych objawów, takich jak ból miednicy, bolesne współżycie

oraz problemy z płodnością. Chociaż leczenie endometriozy opiera się głównie na podejściu chirurgicznym i hormonalnym, rosnące dowody sugerują, że aktywność fizyczna może odgrywać korzystną rolę w łagodzeniu objawów choroby. Celem niniejszego artykułu jest przegląd literatury na temat wpływu aktywności fizycznej na objawy endometriozy oraz ocena roli ćwiczeń w poprawie jakości życia pacjentek. Dostępne badania wskazują, że regularna aktywność fizyczna, w tym ćwiczenia aerobowe i siłowe, może zmniejszyć intensywność bólu, poprawić samopoczucie oraz zmniejszyć potrzebę stosowania leków przeciwbólowych. Ponadto, ćwiczenia fizyczne mają pozytywny wpływ na zdrowie psychiczne, redukując stres, lęk i depresję, co z kolei może poprawiać przebieg choroby. Wyniki sugerują, że aktywność fizyczna powinna być uważana za integralną część leczenia endometriozy, pełniąc rolę wspomagającej terapii. Jednakże, konieczne są dalsze kontrolowane badania i długoterminowe obserwacje, aby określić optymalny rodzaj, intensywność i częstotliwość ćwiczeń dla kobiet z endometriozą.

Abstract

Endometriosis is a common condition affecting approximately 10% of women of reproductive age and leads to many unpleasant symptoms, such as pelvic pain, painful intercourse, and fertility issues. Although treatment primarily involves surgical and hormonal approaches, growing evidence suggests that physical activity may play a beneficial role in alleviating symptoms of the disease. The aim of this paper is to review the literature on the impact of physical activity on the symptoms of endometriosis and evaluate the role of exercise in improving the quality of life for patients. Available research indicates that regular physical activity, including aerobic and strength exercises, can reduce pain intensity, improve well-being, and decrease the need for pain medications. Additionally, exercise positively affects mental health, reducing stress, anxiety, and depression, which, in turn, improves the course of the disease. The findings suggest that physical activity should be considered an integral part of endometriosis treatment, serving as a supportive therapeutic approach. However, further controlled studies and long-term observations are necessary to determine the optimal type, intensity, and frequency of exercise for women with endometriosis.

Keywords: Endometriosis, Chronic disease management, Physical activity, Endometriosis treatment

Introduction

Endometriosis is one of the most common diseases among women of reproductive age. This condition involves the presence of endometrial tissue outside the uterine cavity. The theories explaining the occurrence of endometriosis in women are diverse and include retrograde menstruation, implantation, cellular metaplasia, as well as the influence of environmental and hormonal factors. Endometriosis can present with symptoms such as pelvic pain, dyspareunia (painful intercourse), and infertility. Research has shown that this disease not only weakens sexual relationships due to dyspareunia but also weakens social relationships [1]. The delay in diagnosing endometriosis is 6.7 years, which delays the initiation of proper treatment for the symptoms [2]. Endometriosis is also significant in the context of fertility, as it can disrupt ovarian function, ovulation, and fertilization. Severe endometriosis can lead to the formation of extensive adhesions, which distort the female reproductive organs, causing conditions such as blocked oviducts [3]

The aim of the study

The aim of this study is to review the literature regarding the impact of physical activity on the symptoms and complaints associated with endometriosis. Based on the analysis of available research and data, we will attempt to answer the question of whether exercise is important in the treatment of endometriosis and in improving the quality of life for patients.

Endometriosis in the Female Population

Endometriosis is a common condition among women of reproductive age, affecting approximately 10% (190 million) women worldwide. Studies show that up to 30% of women with endometriosis experience difficulties conceiving, and 50% of women with infertility may suffer from endometriosis [4]. Based on research and statistics conducted in Australia, it has been shown that the number of hospitalizations per year due to endometriosis is as high as 23,400, with the total economic cost amounting to over $9.3 billion annually due to reduced work productivity [5]. Research indicates that women with endometriosis lost as much as 10.8 hours of work per week [2]. The main treatments for endometriosis are surgical procedures and hormonal therapy; however, the effectiveness of these methods also has its limitations. Data suggest that reoperations are required for 1% to 58% of women [6]. Endometriosis also increases the risk of mental health disorders, particularly depression and anxiety. The study conducted by Tsan-Min Wang et al. found that women with endometriosis were nearly twice as likely to develop mental health disorders. Patients with both endometriosis and

depression/anxiety were significantly more likely to use prescription pain medications and undergo reoperations related to endometriosis [6,7].

The Treatment of Endometriosis

Currently, there are many methods for treating endometriosis. The range and choice of treatment depend on the patient's preferences, age, reproductive plans, the severity of symptoms, and the location of the endometriosis lesions. The hormonal medications used in the treatment of this condition are based on evidence that endometriosis is a hormone-dependent disease. Hormonal treatment aims to reduce pain symptoms and suppress ovarian function, which, through hormone secretion, affects the active endometriosis lesions. This treatment includes the use of, among others: estrogen-progestin preparations, progestins [5]. Intrauterine devices are also used, which help alleviate pain during dysmenorrhea and hypermenorrhea [8]. According to ESHRE guidelines, GnRH agonists can be used as a second-line therapy for endometriosis, while being mindful of their side effects, such as decreased bone mineral density, headaches, insomnia, vaginal dryness, and reduced libido [5,9]. A special part of endometriosis treatment is laparoscopic surgery. The goal of the surgery is to remove visible endometrial lesions and adhesions, improving the quality of life for patients. It has been observed that quality of life, particularly in terms of pain perception, has significantly improved in women suffering from endometriosis [10]. The benefits of surgical treatment should be considered with particular attention to young women, as this treatment may reduce ovarian reserve [11].

The Overall Impact of Sport on Women's Health

Based on data collected by Hongwey et al., we observe the significant role that physical activity plays in reducing the risk of death from cardiovascular causes in women. Studies have shown that engaging in regular moderate-intensity aerobic exercise for 300 minutes per week reduces the risk of death in women by as much as 24%. Women who engage in sports within this time frame and at the appropriate intensity are able to achieve greater health benefits than men, highlighting the substantial impact physical activity has on health within the female population [12]. Additionally, the influence of physical activity on dietary habits among women has been observed. Women who actively practice yoga tend to follow a healthier and more balanced diet. Based on these findings, we can conclude that physical activity affects health both directly and indirectly, as it also contributes to the improvement of dietary habits. A healthy and balanced diet is an essential element in improving the quality of life and health in women [13]. According to studies, physical exercise is particularly important for women in the perimenopausal and

postmenopausal periods. Physical activity positively impacts bone mineral density, anxiety, sleep quality, and overall well-being. Based on these observations, healthcare providers should consider physical activity as a strategy to manage symptoms in women experiencing menopause [14].

The Impact of Physical Activity on Endometriosis Symptoms

Based on the analysis of existing research regarding physical activity in the context of endometriosis, significant improvements in health and symptom relief have been observed in women suffering from this condition. Regular participation in sports led to a reduction in the intensity of pain associated with endometriosis [15,16]. Exercises performed at least 3 times a week, lasting from 45 to 60 minutes, can reduce menstrual pain by about 25% on the VAS scale and decrease the pain intensity on the day following the exercise [17]. Women who exercised regularly reported less menstrual pain, improved well-being, and better social interactions [15,16]. Observational results confirm that engaging in sports both individual and team disciplines positively affects the mental health of patients. Improvement in mood, reduction of stress, and anxiety contribute to a decrease in pain symptoms associated with endometriosis, thus positively influencing the disease's course [18, 19].

Moreover, physical activity helped women with endometriosis feel more in control of their condition. Research conducted by Enseri and others showed that regular exercise (at least 3 times a week) reduced pain intensity on the days following exercise, while those who exercised only twice a week experienced stronger pain [17]. Regular physical activity not only reduces disease symptoms but also decreases the need for pain medications, thereby reducing the risk of side effects associated with the long-term use of NSAIDs [20]. Evidence suggests that women with endometriosis who engage in less physical activity may experience worsening chronic pain, as well as a deterioration in their general health and an increased risk of developing other diseases [21].

Additionally, exercises such as stretching and yoga, combined with psychological therapy, have proven effective in alleviating pain and depression associated with endometriosis, as well as reducing medical interventions, which in turn lowers treatment costs [22]. Physical activity also affects the release of cortisol, which has anti-inflammatory effects in the body [23], and increases the levels of anti-inflammatory cytokines, positively influencing the disease course [24]. Studies have shown that regular physical exercise reduces estrogen levels, which may improve the clinical course of endometriosis by minimizing the stimulation of endometrial lesions [25]. An important factor is that physical activity negatively affects the hypothalamic-

pituitary-ovarian axis, further lowering estrogen levels, which reduces the risk of endometriosis development and may potentially alleviate its course [26].

Physically active women with endometriosis should also consider following a Low FODMAP diet, which has been shown to reduce pain symptoms. In contrast, there is insufficient data and clear dietary recommendations regarding the endometrial diet. The endometrial diet avoids products such as cow's milk, red meat, black beans, soy, and limits caffeine intake to a maximum of 200 mg per day. The introduction of this diet should be consulted with a dietitian [27]. Active women should also consider quitting smoking, which will help lower estradiol levels, an important hormone in the development and growth of endometrial lesions.

Physical exercises, particularly those focusing on muscle relaxation, may also positively affect women with endometriosis by alleviating pain and mental health issues [28]. Regular physical activity improves blood circulation, which helps eliminate excess hormones and toxins from the body that contribute to the worsening of endometriosis symptoms. Physical activity also reduces inflammation, which plays a key role in the symptoms of endometriosis, providing relief and improving the overall quality of life for women [29].

Conclusion

The main aim of this paper was to emphasize the role of physical activity in alleviating symptoms associated with endometriosis in women. By focusing on the significance of exercise in the context of this disease, we can conclude that regular physical activity could become a key element in future therapies for endometriosis, helping women manage its symptoms. An important conclusion is that physical activity can not only relieve pain-related symptoms but also positively affect the overall health of women with endometriosis, improving their quality of life. However, in order to develop effective recommendations, further controlled studies and long-term observations are necessary. These will help determine the optimal type, intensity, and frequency of physical activity that would be most beneficial for patients.

Increasing engagement in physical activity can also lead to improvements in the mental health of women with endometriosis, which is an equally important aspect of a holistic approach to treating this disease. Reducing pain symptoms, alleviating anxiety, and improving mood can significantly support a comprehensive therapy that not only reduces physical discomfort but also enhances the overall quality of life for patients. Therefore, physical activity should be considered an integral part of endometriosis treatment, playing an important role in a comprehensive approach to the health and well-being of women suffering from this chronic condition.

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