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Uterine leiomyoma: Analysis of Clinical Manifestation and Different Risk Factors in Women of Reproductive Age at Siloam Hospitals Manado

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Uterine leiomyoma merupakan tumor jinak yang paling sering terjadi pada wanita usia reproduksi. Masalah ini menjadi semakin relevan dengan kenyataan bahwa banyak kasus mioma uteri tidak menunjukkan gejala sehingga sering terlewatkan dan hanya ditemukan secara tidak sengaja. Penelitian ini bertujuan untuk mengidentifikasi faktor risiko serta manifestasi klinis Uterine leiomyoma pada wanita usia reproduksi. Metode penelitian ini melibatkan basis data rekam medis pada *in-patient department* Siloam Hospitals Manado dan studi literatur dari berbagai sumber terkait Uterine leiomyoma. Desain penelitian ini menggunakan desain *cross sectional*. Desain ini memungkinkan peneliti untuk mengamati dan menganalisis hubungan antara variabel tanpa intervensi maupun manipulasi sehingga dapat menggambaran seberapa sering karakteristik muncul dalam populasi pada waktu tertentu. Hasil penelitian menunjukkan bahwa faktor genetika, usia, hormon, dan etnis mempengaruhi risiko wanita untuk mengembangkan Uterine leiomyoma. Manifestasi klinis varian Uterine leiomyoma sangat beragam, mulai dari klinis yang ringan hingga yang berdampak signifikan terhadap kualitas hidup wanita. Penelitian lebih lanjut diperlukan untuk memahami mekanisme perkembangan dan intervensi terbaik untuk kondisi ini.

INTRODUCTION

One of the most common benign tumors seen in the female reproductive organs is Uterine leiomyoma, commonly known as Myoma Uteri. " Uterine leiomyoma is the most common benign tumor experienced by women in the reproductive age group," write Sardjono and Sugiharto (2021). Its existence is critical to gaining attention, particularly in Indonesia, given its relatively high prevalence and potential therapeutic significance. "Uterine leiomyoma is a benign tumor originating from the smooth muscle of the uterus and is the most common Gynecological Tumor found in women of reproductive age," according to Surya (2019). This issue is becoming increasingly important since many cases of uterine fibroids are asymptomatic, therefore they are frequently neglected and only discovered by chance. However, for some women, this myoma can cause few disturbing complications, including fertility problems.

The graph below depicts the number of instances of Uterine Leiomyoma treated in Siloam Hospitals Manado's Inpatients Department (IPD) over the last five months. As can be seen, the number of instances climbed dramatically in March and surpassed the ten-case mark in January 2023. Previously, the case had never reached this number in the prior five months.

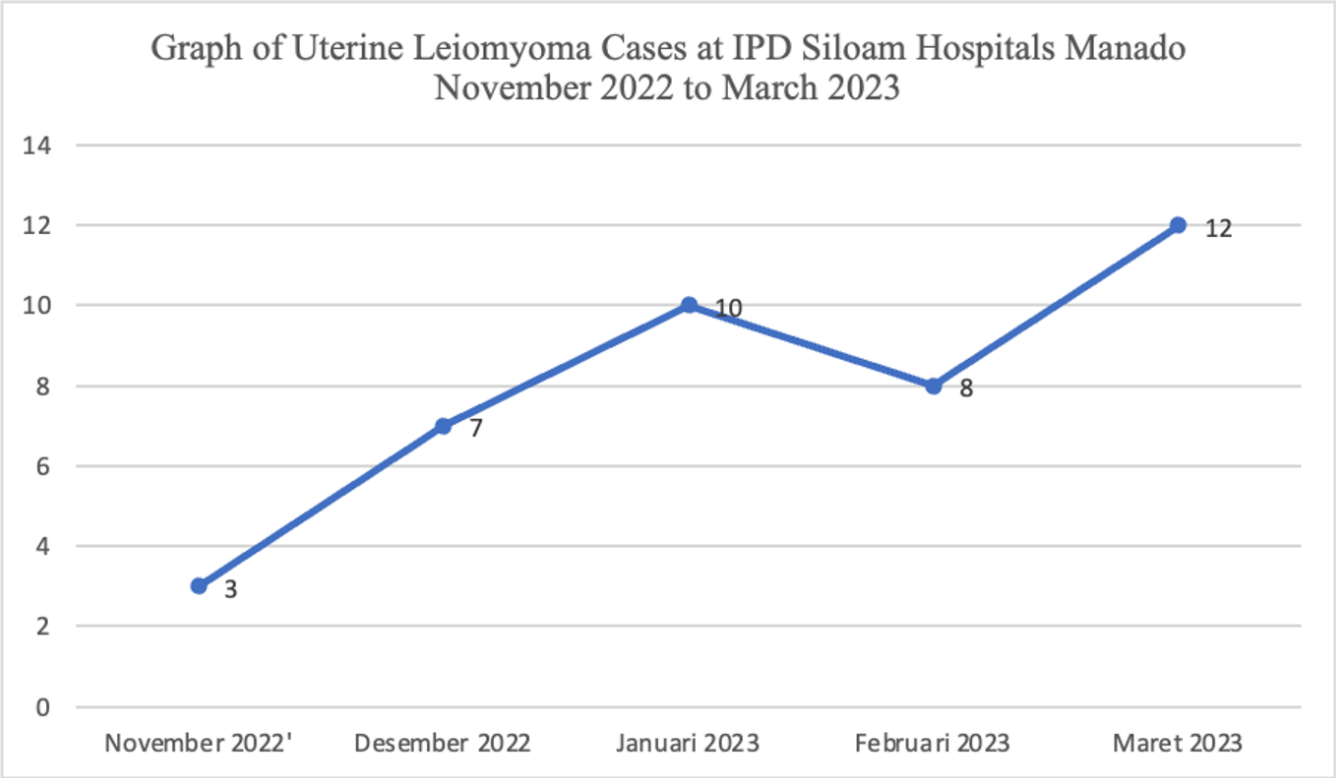

Figure 1. *Cases of Uterine Leiomyoma*

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This graph depicts the five-month trend in the number of cases with Uterine Leiomyoma admitted to IPD at Siloam Hospitals Manado. The chart's specifics are as follows.

1. X (Horizontal) axis: The months from November 2022 to March 2023 are represented. This provides context for the data presented.
2. Y (Vertical) axis: Displays the number of Uterine Leiomyoma patients admitted to Siloam Hospitals Manado. The numbers on the vertical axis indicate the number of cases every month.
3. Estimated number of cases of Uterine Leiomyoma hospitalized at Siloam Hospitals Manado from November 2022 to February 2023 based on historical data and possible trends. During this time, the number of cases tends to level out and falls below 10 each month.
4. Data from March 2023 shows a considerable increase in the number of instances, with 12 cases of Uterine Leiomyoma hospitalized, up from 8 cases previously. This represents a huge increase when compared to previous months.
5. Result: When compared to the previous year, there was a considerable increase in Uterine Leiomyoma incidences in March 2023. This suggests that more research into the causes of the increase is needed, and that additional interventions or preventive measures could be considered.

These graphs are important for understanding the dynamics of Uterine leiomyoma cases at Siloam Hospitals Manado and assisting in resource planning, patient management, and strategies for

future case management. This study aims to identify risk factors that influence the appearance of uterine leiomyoma in women of reproductive age. In addition, this study also focuses on the clinical manifestations that this condition may cause, including symptoms, complications, and its impact on the quality of life of women diagnosed with uterine leiomyoma. As emphasized by Surya (2019), risk factors associated with Uterine Leiomyoma include age, race, family history, hormonal status, and lifestyle from the patient.

METHOD

Research Types

In research, a cross-sectional design is used. Researchers can use design to observe and study interactions between variables without intervention or manipulation, providing an overview of how frequently specific circumstances or characteristics occur in the population at any one time.

Location and Time of Research

Siloam Hospitals Manado is the site of this study. The study was carried out in April 2023.

Population and Sample

Women diagnosed with uterine leiomyoma at Siloam Hospitals Manado were included in this study. Samples will be taken from this group using the following inclusion criteria: women having a confirmed diagnosis of Uterine Leiomyoma who are in the inpatient department. Meanwhile, women who were pregnant or had other medical issues that could alter the study's results were excluded.

Data Collection

Data collection will be carried out through a structured review of medical records in June 2023. Analysis of the literature to collect information about risk factors, clinical manifestations, and the impact of uterine leiomyoma on daily life will also be comprehensively reviewed.

Data Processing and Data Analysis

After data collection is complete, statistical analysis will be performed as well as descriptive analysis will be used to describe the characteristics of the sample, while inferential analysis, such as a Chi-Square Test or t-Test, will be used to assess the relationship between the variables studied.

RESULTS

There was an increase in cases of uterine leiomyoma from the previous month in the available medical record data until it became one of the 20 most prevalent diseases in March 2023, or equivalent to 1.23% of all inpatient department cases diagnosed with Uterine Leiomyoma. This phenomenon demonstrates that over half of all women of reproductive age are at risk of contracting this disease.

Uterine leiomyoma is a disorder that commonly affects women of childbearing age. Leiomyomas or fibroids are the most frequent benign pelvic tumors in women globally, according to Cheng et al. (2022). This is congruent with the findings of this study, which found that 40% of Indonesian women of reproductive age had this syndrome.

Although classified as a benign tumor, Uterine leiomyoma are quite complex in terms of origin and

risk factors. Genetic connection is one element that sticks out. A positive family history of this illness suggests a genetic potential that may be passed down from generation to generation.

Viva et al. (2021) in his research highlighted the monoclonal aspect of this tumor growth, which means the tumor grows from a single stem cell. This indicates a consistency in cell growth, which may be influenced by genetic factors. The uterine smooth muscle cells that are the source of these tumor growths may have certain genetic mutations or changes that promote their growth into tumors.

Uterine leiomyoma, although it has a strong association with genetic factors, cannot be separated from the influence of the lifestyle lived by individuals. Modern lifestyles that tend to be inactive and consume an unbalanced diet affect the balance of hormones and the functions of other body systems, which can trigger or exacerbate conditions such as uterine leiomyoma.

Physical activity, such as sports, has been shown to offer numerous health benefits, including hormone balancing and increased blood circulation. Physical inactivity can cause circulation to stagnate and hormonal changes, which can affect the growth of abnormal cells in the uterus.

Unhealthy eating habits, particularly a lack of consumption of vegetables and fruits, contribute to a lack of fiber, vitamins, and minerals, all of which are needed for women's reproductive health. Deficiencies in specific nutrients can affect hormone balance and cell regeneration processes, causing aberrant cells to proliferate.

In addition, smoking has long been known to have many negative effects on health. However, the correlation between smoking and uterine leiomyoma found in this study adds to the long list of adverse effects of smoking on health, especially women's reproductive health. Harmful substances in cigarettes can affect hormone balance and interfere with uterine function, which in turn can trigger or exacerbate the condition of Uterine Leiomyoma.

Hormonal contraception has become the choice of many women around the world as an effective method of birth control. However, the use of this type of contraception, especially in the long term, has an impact on the balance of hormones in the body. In the context of uterine leiomyomas, these hormonal changes appear to play a key role.

Long-term hormonal contraceptive use, such as birth control pills or implants, contains synthetic hormones designed to mimic the body's natural hormones, estrogen, and progesterone. These hormones are responsible for preventing ovulation, altering the uterine lining, making it harder for a fertilized egg to attach, and influencing the consistency of cervical mucus, making it difficult for sperm to enter the uterus. Although it is efficient at preventing pregnancy, the hormonal changes that it generates can have an impact on the proliferation of smooth muscle cells in the uterus.

Estrogen is known as a hormone that stimulates the growth of uterine smooth muscle cells. Therefore, excess estrogen or an imbalance between estrogen and progesterone can trigger or accelerate the growth of leiomyomas. Thus, in the long term, hormonal contraceptives can increase the risk of developing fibroids or uterine leiomyomas.

In addition, there are several studies showing that hormonal contraceptives, especially those containing only progesterone, can affect the structure and function of the blood vessels around the uterus. This can lead to impaired circulation and nutrition to the smooth muscle cells of the uterus, possibly contributing to the growth of Leiomyomas.

DISCUSSION

Uterine leiomyoma, often known as fibroids, is a medical issue that is frequently discussed in the context of women's reproductive health. These fibroids are benign tumors that grow on the uterine

wall and can range in size from very small to enormous, causing the shape and size of the uterus to change. Although it is typically harmless, its presence can have a substantial impact on a woman's quality of life, ranging from pain to heavy monthly bleeding to pregnancy difficulties.

In Indonesia, the prevalence of uterine leiomyoma is quite significant. This is in line with global research conducted by Cheng et al. (2022), who found that uterine fibroids occupy the top position as benign tumors in the female pelvic organs in various parts of the world. Recognizing this high prevalence, it is important for health practitioners, especially in Indonesia, to understand more deeply about this condition, starting from risk factors, symptoms, to methods of handling it.

Family history is frequently used to determine a person's risk for a variety of medical disorders, including uterine leiomyoma. According to current statistics, many women with Uterine leiomyoma have family members who also have the disorder, whether they are moms, sisters, or other close relatives. This suggests that there is a strong genetic relationship in the genesis of this tumor.

Viva et al.'s (2021) study adds to our understanding of the biology elements of uterine leiomyoma. They discovered that this benign tumor arose from uterine smooth muscle cells in a monoclonal manner, which means that it began as a single cell that proceeded to divide and expand. This demonstrates the presence of specific genetic alterations or mutations that cause tumor growth.

This genetic component is not only a risk factor, but it is also important in understanding the mechanism of uterine leiomyoma growth and development. Understanding this genetic relationship is therefore crucial not just for individuals with a family history of similar disorders, but also for health practitioners in providing better effective prevention, diagnosis, and treatment.

Uterine leiomyoma is impacted not only by hereditary factors, but also by different aspects of lifestyle and the environment in which a person lives. Daily routines and behavior can have a big impact on your health, including your risk of getting Uterine Leiomyoma.

One lifestyle factor that has a big impact is physical activity. Less or irregular physical activity can increase the risk of various diseases, including hormonal disorders that can trigger tumor growth. Regular exercise not only helps to maintain weight but also helps in maintaining hormonal balance, thereby reducing the risk of fibroid growth.

Diet is also a key factor. Consumption of foods high in fat and sugar, as well as a lack of fiber intake from vegetables and fruit, can disrupt hormonal balance and increase the risk of tumor growth. In addition, foods that are processed with certain chemicals or that contain pesticides can also have a negative impact on reproductive health.

One of the harmful habits is smoking, which has been shown to have a negative impact on health in general. In the setting of uterine leiomyoma, toxic compounds in cigarettes can impair uterine tissue quality, cause inflammation, and upset the balance of the hormone estrogen, which contributes to the growth of fibroids.

Hormonal contraception has become a solution for many women in managing their pregnancy and menstrual cycles. Its use in Indonesia is also increasing in line with public awareness of the importance of family planning. However, as with many medical interventions, hormonal contraceptives are not without potential side effects.

In this study, it was found that long-term use of hormonal contraceptives can increase the risk of uterine leiomyoma growth. This may be caused by hormonal changes that occur due to the use of these contraception. Hormones, especially estrogen, have an important role in the growth and development of fibroids. Hormonal contraceptives can change the natural balance of hormones in the body, which may trigger or accelerate the growth of fibroids.

It should be noted, however, that hormonal contraceptives continue to offer significant benefits, and for many women, the benefits outweigh the risks. However, it is critical for clinicians and patients to communicate effectively about the potential dangers and advantages of hormonal contraception, particularly for women with a family history of comparable diseases or other risk factors.

The study's findings offer new insights into the medical world, particularly for health practitioners who specialize in women's reproductive health. To enhance preventive and therapeutic measures for Uterine leiomyoma, a common reproductive health condition among women, a full understanding of its risk factors is required.

Doctors and other medical workers can devise more targeted and successful intervention methods if they are aware of the risk factors that contribute to the development of uterine leiomyoma. They can, for example, provide more individualized lifestyle advice that can minimize risk or speed up early detection, enhancing the odds of effective treatment. Furthermore, public education is a vital component of preventative measures. Given the high occurrence of uterine leiomyoma, it is critical for women, particularly those of childbearing age, to acquire accurate and complete information regarding this disorder. Education might involve learning about symptoms, risk factors, and risk-reduction strategies. Given its relationship with this disorder, the technique of contraception should also be discussed.

CONCLUSIONS AND RECOMMENDATIONS

Uterine leiomyoma, often known as fibroid, is a benign pelvic tumor that is common in women, particularly in Indonesia. According to the findings of this study, genetic factors, family history, and lifestyle are the primary risk factors that determine the existence and growth of uterine leiomyoma. Furthermore, as explained by Cheng et al. (2022) and Viva et al. (2021), long-term use of hormonal contraceptives has the potential to affect the growth of these tumors. Given these results, it suggests that public awareness about the value of routine checkups be increased, particularly for those with a family history of uterine leiomyoma. Health policy should place a greater emphasis on preventive measures and give accurate information about contraceptive options. Then, additional study is needed to better understand the mechanism of tumor formation and the potential for more targeted therapies.

Study Weakness

The weakness of the study is that the search for medical records is not in-depth so it is hoped that other researchers will be more in-depth in tracing it in the next study.

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