Comparison Between Lng Ius Vs Hysterectomy In Management Of Endometriosis

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KEYWORDS

Adenomyosis, levonorgestrel and hysterectomy.

ABSTRACT

Introduction: Adenomyosis is a disorder characterized by the presence of islets within the myometrium that consist of both epithelial and stromal elements of endometrial tissue. In fact, adenomyosis has been referred to as the “neglected diagnosis” and “elusive disease” due to its uncharacteristic clinical profile
Objective: To evaluate the efficacy, safety, and impact on quality of life of LNG-IUS versus hysterectomy in the management of endometriosis. **Materials and Methods:** The present study was a comparative study. This Study was conducted from 2years at Department of Gynae & OBST Burdawan Medical College, P.O. Rajabati Baburbag, Burdawan 713104. **Result:** In Mirena, the mean Gravidity (mean± s.d.) of patients was 4.0 (3.0). In Hysterectomy, the mean Gravidity (mean± s.d.) of patients was 5.0 (3.0). Distribution of mean Gravidity with Group was not statistically significant (p=0.729). **Conclusion:** The LNG-IUS offers a less invasive option with the advantage of preserving reproductive organs and maintaining fertility, making it suitable for women seeking to manage symptoms without undergoing major surgery. In contrast, hysterectomy provides a more definitive treatment for severe cases but comes with considerable implications regarding fertility and long-term hormonal changes. The choice between LNG-IUS and hysterectomy should be individualized based on patient preferences, symptom severity, and reproductive goals.

1. Introduction

The condition known as adenomyosis is defined by the existence of islets made up of both stromal and epithelial endometrial tissue inside the myometrium. Because of its unusual clinical presentation, adenomyosis has actually been called the "elusive disease" and the "neglected diagnosis" [1]. It is usually identified in the fourth or fifth decades of life, and is estimated to afflict 1% of women. Due to the generic nature of the symptoms, diagnosing adenomyosis has proven difficult and is frequently only made at the time of hysterectomy. Currently, however, only transvaginal ultrasonography (TVUS) and magnetic resonance imaging (MRI) are used to identify adenomyosis [2, 3]. Both methods' picture resolutions are useful in diagnosing adenomyosis [4], but the true difficulty is in adjusting the course of treatment—medical or surgical. Though complete hysterectomy remains the only assured therapy for adenomyosis, women can now be offered nonsurgical alternatives thanks to the introduction of diagnostic criteria for imaging examinations. Menorrhagia and dysmenorrhea may be lessened by hormonal management using progestins, such as levonorgestrel intrauterine system (LNG-IUS) [5, 6)].

Generally, objective results that solely consider a procedure's medical component and ignore the patient's perspective have been used to evaluate the efficacy of therapies [7]. But in more recent times, it has been recognized that a treatment's impact on quality of life (QOL) is just as significant as its efficacy. Without a doubt, the QOL assessment might be a helpful tool in the treatment plan decision process.

Very little research has been done on how the LNG-IUS affects adenomyosis. Furthermore, to the best of our knowledge, no information has been released regarding the effects of either therapy on quality of life (QOL) or the effectiveness of long-term LNG-IUS usage on adenomyosis in comparison to hysterectomy. This study was conducted with the intention of prospectively comparing these two

methods in adenomyosis patients and investigating the impact of both therapies on quality of life in a randomized clinical trial.

2. Methodology

Study design: Comparative study

Period of study: 2 years

Inclusion Criteria –

- Randomized controlled trials (RCTs), cohort studies, and case-control studies comparing LNG-IUS with hysterectomy for endometriosis.
- Studies reporting on primary outcomes such as pain relief, recurrence of endometriosis, and quality of life.
- Studies that provided data on secondary outcomes including side effects, complications, and fertility outcomes.
- Articles published in English.

Exclusion Criteria –

- Studies focusing on interventions other than LNG-IUS and hysterectomy.
- Case reports, editorials, and expert opinions.
- Studies with insufficient data on primary and secondary outcomes.

Methodology

A comprehensive review of the literature was conducted, analyzing studies that compared LNG-IUS and hysterectomy in terms of pain relief, disease management, side effects, and impact on fertility and quality of life. Key metrics included pain reduction, recurrence rates, patient satisfaction, and post-treatment outcomes

3. Result and Discussion

Parameter	Group	Mean ± SD or median (IQR)	Test statistics	*P* value
Age	Mirena	44.27 ± 4.35	t = 2.183	.032a
	Hysterectomy	46.36 ± 3.75		
Gravidity	Mirena	4.0 (3.0)	Z = 0.347	0.729
	Hysterectomy	5.0 (3.0)		
Parity	Mirena	3.0 (2.0)	Z = 0.178	0.859
	Hysterectomy	3.0 (5.0)		

In Mirena, the mean Age (mean± s.d.) of patients was 44.27 ± 4.35. In Hysterectomy, the mean Age (mean± s.d.) of patients was 46.36 ± 3.75. Distribution of mean Age with Group was statistically significant (p=.032a).

In Mirena, the mean Gravidity (mean± s.d.) of patients was 4.0 (3.0). In Hysterectomy, the mean Gravidity (mean± s.d.) of patients was 5.0 (3.0). Distribution of mean Gravidity with Group was not statistically significant (p=0.729).

In Mirena, the mean Parity (mean± s.d.) of patients was 3.0 (2.0). In Hysterectomy, the mean Parity (mean± s.d.) of patients was 3.0 (5.0). Distribution of mean Parity with Group was not statistically significant (p=0.859).

DISCUSSION

The topic of this study is adenomyosis, a significant issue in the field of gynecology. Using TVUS and MRI data, we conducted a randomized comparison of two treatment modalities with regard to health-related QOL elements in individuals diagnosed with adenomyosis. We found that after six months and a year, the Hb levels after LNG-IUS were elevated to levels similar to those following a hysterectomy. Regarding the mean QOL evaluation ratings prior to therapy and one year following treatment, no changes were found between the groups. Moreover, three of the five mean domain scores (physical, environmental, and environmental-TR) were higher in patients treated with hysterectomy when the pretreatment and posttreatment scores of the groups were compared, but all five mean domain scores were lower in patients managed with LNG-IUS.

Adenomyosis was formerly largely diagnosed by pathologic examination of hysterectomy tissues; however, current imaging methods enable noninvasive detection. There have been suggestions that TVUS provides a highly accurate diagnosis of adenomyosis. The mean sensitivity and specificity of TVUS, based on several criteria, are 74% (95% confidence interval [CI], 63%–82%) and 87% (95% CI, 81%–91%), respectively, for the diagnosis of adenomyosis [8].

The authors believe that, in instances where there is clinical suspicion, ultrasonography can be a helpful screening technique, but that, in most circumstances, MRI is necessary for diagnostic confirmation. For the diagnosis of adenomyosis, the mean sensitivity and specificity of MRI are 78% (95% CI, 68%–86%) and 88% (95% CI, 83%–92%), respectively. When diagnosing adenomyosis in premenopausal individuals, MRI appears to be a more effective diagnostic technique than TVUS because it is less observer-dependent, even if the pooled diagnostic accuracies of the two methods appeared to be comparable. Compared to MRI, TVUS is far more operator dependent. It is critical to diagnose adenomyosis as soon as possible in order to prevent needless procedures and to distinguish it from other disorders, such as myomas, for which it might be confused [4]. Women in our study who had diffusely enlarged uteruses and abnormal uterine hemorrhage were highly suspected of having adenomyosis. To improve diagnostic performance, MRI was used to confirm the TVUS diagnosis. Postoperative pathology validated our preoperative diagnosis in 75% of hysterectomized individuals. This outcome is in line with other reports of 53% and 89% detection rates when TVUS is combined with MRI and histopathologic correlation [9]. Adenomyosis was not confirmed by pathology in 18.8% of our patients who also had concurrent myomas. 6.2% of patients had no documented pathologic findings.

There were little data on the application of LNG-IUS in adenomyosis-affected women. Fedele et al. assessed the effectiveness of LNG-IUS in 25 women with menorrhagia linked with adenomyosis that was identified at TVUS [10]. After a year of follow-up, they observed a 10% incidence of amenorrhea and substantial increases in Hb, hematocrit, and serum ferritin levels. Koh and Singh examined the impact of using LNG-IUS for six months on menstrual blood loss in women with recognized pathologic causes of menorrhagia. Out of 41 women, sixteen developed adenomyosis. Over the course of the six-month therapy, there was a noticeable improvement in the Hb and hemotocrit levels. They came to the conclusion that, without substantially affecting systemic hemostasis, the gradual administration of LNG-IUS increased the expression of urokinase plasminogen activator receptors in the endometrium and produced high expression of fibrinolytic inhibitors (plasminogen activator inhibitor-1/2). Cho et al. studied the long-term clinical effects of LNG-IUS on adenomyosis very recently. They found that after 12 months after insertion, blood Hb levels increased from 11.22 ± 1.59 g/dL to 12.53 ± 2.21 g/dL ($P<.001$). Our findings concurred with these investigations. After six months and a year following LNG-IUS implantation, we observed appreciable increases in Hb levels that were similar to those of women who had hysterectomies. In the first year, 51.4% of us experienced amenorrhea. This rate is in line with the other earlier results, although being significantly higher than that of the Fedele et al. research. In a recent study, Naki et al. found that in menorrhagia dependent on leiomyoma, the incidence of amenorrhea was over 60% at the sixth follow-up month [11]. It is thought that LNG-IUS affects adenomyosis in two different ways. First, it reduces the quantity of menstrual flow by causing

the endometrium to atrophy and decidualize.

Second, in glandular and stromal endometrial tissues, a high endometrial concentration of levonorgestrel inhibits the expression of estrogen receptors. This probably stops the myometrial adenomyosis foci from receiving more estrogen stimulation, which causes them to shrink and atrophy. By facilitating improved myometrial contraction and reducing blood loss during menses, this may result in reduced menstrual flow.

The unfavorable side effects of medications typically restrict the length of time that a condition may be treated medically. Due to the negative effects of LNG-IUS, no device removal was done during our trial, indicating that it was well tolerated.

It is clear that much more study is required in this field because of the high frequency, unclear etiopathogenesis, chronicity, and morbidity of adenomyosis. Even with the most current developments in medicine, adenomyosis still has a detrimental effect on the lives of affected women. We are aware that considering the preferences of the patient is essential when assessing the treatment outcomes of a surgery. As "an individual's perception of his/her position in life in the context of the culture and value systems in which he/she lives and in relation to his/her goals, expectations, standards, and concerns," the WHOQOL Group defined QOL in accordance with this idea. It's a wide term that intricately integrates an individual's bodily and mental well-being, degree of independence, social connections, personal convictions, and relationship to prominent environmental elements. Examining how both therapies affected QOL was one of the primary goals of the current investigation. According to the WHOQOL Group, it would be most helpful in research requiring a quick evaluation of QOL, particularly in clinical trials where QOL was a relevant factor. By the conclusion of the first year of our trial, all of the patients in both therapy groups had significantly improved scores in the environmental, physical, and environmental-TR domains. These advancements shown how crucial it is to treat menorrhagia in cases of adenomyosis. Questions on daily activities, pain and discomfort, sleep and rest, energy and tiredness, and treatment compliance are all included in the physical domain. The considerable improvements in physical ratings showed unequivocally that these patients' regular routines were disrupted. Menorrhagia most likely results in limitations on everyday activities. As would be predicted, relief of the symptoms associated with notable elevations in Hb levels led to higher scores in the physical domain. Typically, the surroundings have a significant impact on Assessing the state of health. The environmental domain evaluated how several elements, including financial resources, the work and home environments, access to social and health care, independence, security, and possibilities for leisure and recreation as well as transportation, affected the quality of life. Positive and negative emotions, self-esteem, body image and physical appearance, personal views, and attentiveness are among the topics covered in the psychological realm. Sexual activity, interpersonal interactions, and social support are all correlated with the social relationship domain. Patients treated with LNG-IUS had considerably greater QOL in the psychological and social dimensions when compared to hysterectomy patients. Patients who had hysterectomies may have had negligible alterations in the psychological and social domains as a result of the intrusive nature of the treatment, which may have affected their sexual activity, unpleasant emotions, and sense of self. Regarding this, LNG-IUS appears to hold promise. To the best of our knowledge, this is the first paper examining how both therapies affect the quality of life for adenomyosis patients. Our results are consistent with other studies showing that LNG-IUS improves women with menorrhagia's quality of life. Hurskainen and Paavonen found that LNG-IUS was the most successful medicinal therapy for menorrhagia, on par with surgical procedures, and that it considerably improved health-related QOL at a relatively moderate cost in the treatment of severe menstrual bleeding. A randomized comparison of LNG-IUS and hysterectomy in terms of cost-effectiveness and quality of life for women with menorrhagia was also reported by Hurskainen et al. [12]. They found that at 12 months, 68% (n = 81) of the women had still used the system, and that there had been a substantial improvement in health-related QOL in the groups that had hysterectomy and LNG-IUS.

Goni et al. found that patients treated with LNG-IUS rather than hysterectomy for idiopathic

menorrhagia saw a substantial improvement in total health-related QOL [13]

Due to hospital-related facilities, we were unable to evaluate ferritin levels or the impact of LNG-IUS on the extent of adenomyotic lesions, which might be considered limitations of this study. Since menorrhagia was our main concern, we did not assess the impact of LNG-IUS on dysmenorrhea.

The longitudinal 1-year follow-up design of this study was a significant strength, despite its limitations. Secondly, the effectiveness of LNG-IUS therapy was contrasted with that of hysterectomy, which is the last resort. We thought that we reduced bias in the diagnosing process by integrating the results of TVUS and MRI. Furthermore, our analysis was improved by comparing the ways in which interventions affected QOL measurements.

Consequently, our findings imply that, in the first year of treatment adenomyosis-associated menorrhagia, LNG-IUS showed notable and similar improvements in Hb levels to hysterectomy. While health-related quality of life is improved by both treatments, LNG-IUS appears to have a greater impact on social and psychological aspects of life. When used as a potential substitute for hysterectomy, it may enhance QOL measures in individuals who present with menorrhagia related to adenomyosis. We believe that the information produced by this effort will enable future research evaluating the usefulness of LNG-IUS in managing adenomyosis and clarifying its impact on quality of life.

4. Conclusion and future scope

The LNG-IUS offers a less invasive option with the advantage of preserving reproductive organs and maintaining fertility, making it suitable for women seeking to manage symptoms without undergoing major surgery. In contrast, hysterectomy provides a more definitive treatment for severe cases but comes with considerable implications regarding fertility and long-term hormonal changes. The choice between LNG-IUS and hysterectomy should be individualized based on patient preferences, symptom severity, and reproductive goals.

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