

Quality of Life after Hysterectomy and Uterus-Sparing Hysteroscopic Management of Abnormal Uterine Bleeding or Heavy Menstrual Bleeding

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ABSTRACT

Study Objective: To compare the effect on quality of life (QOL) of uterus-sparing hysteroscopic targeted therapy with that of hysterectomy as therapeutic surgical procedure for heavy menstrual bleeding (HMB). **Methods/Methodology:** This was a prospective observational study. **Setting:** Endoscopy unit, Department of Obstetrics and Gynecology, Datta Meghe Institute of Medical Sciences Wardha, Maharashtra, India. **Patients:** A total of 354 women meeting inclusion and exclusion criteria were included in the study, of which 178 women had undergone hysteroscopic targeted therapy while 176 women had undergone abdominal hysterectomy as surgical treatment for HMB. **Interventions:** Group I – Hysteroscopic surgical procedure – polypectomy, endometrial resection, myomectomy. Group II – Hysterectomy – abdominal hysterectomy, vaginal hysterectomy, laparoscopic hysterectomy.) **Results:** Health-related QOL assessed by Short Form 36 questionnaire response score was significantly better for women who underwent hysteroscopic targeted therapy was significantly better at both short-term and long-term follow-up. **Conclusions:** Both hysteroscopic procedures and hysterectomy when used as therapeutic modality for abnormal uterine bleeding/HMB (AUB/HMB) improve the quality of life when used as therapeutic option, and the improvement in QOL is significantly different at 6 months and 1 year while the improvement in QOL 1 week after surgery is better in hysteroscopy group when compared to hysterectomy group suggesting early improvement in QOL when hysteroscopic therapies are used as treatment modality for surgical management of HMB/AUB.

KEYWORDS: Abnormal uterine bleeding, heavy menstrual bleeding, hysterectomy, hysteroscopy, quality of life

INTRODUCTION

Abnormal uterine bleeding (AUB) or heavy menstrual bleeding (HMB) is one of the most common disorders in gynecology in midlife. It encompasses abnormalities in the regularity, duration of flow, frequency, and/or blood flow volume relative to “normal” menstruation. Population-based estimates based on objective determination of monthly menstrual blood loss suggest that blood loss >80 ml per menstrual cycle occurs in about 9%–14% of menstruating women, while the prevalence based on subjective perceptions ranges between 20% and 52%. Almost 30%–40% of

these women have a specific structural uterine cause, which can be specifically found out and needs to be treated with targeted approach.

Gynecologists and the suffering women experience the challenge of choosing between various treatment

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options. Medical treatment often fails, and traditionally, both opt for hysterectomy as definitive treatment for HMB; the decision is more common in perimenopausal age group. Hysterectomy is effective in permanently stopping HMB, but it stops fertility and is associated with all the risks of major surgery, including infection and blood loss affecting short- or long-term quality of life (QOL) of these women. These risks are smaller with hysteroscopic procedures.

Recent advances in minimally invasive procedures have made conservative surgery possible for women with HMB. Hysteroscopy is one of the main emerging diagnostic as well as therapeutic tools for the management of HMB. Minimally invasive treatments by operative hysteroscopy have proven to be good therapeutic options to provide relief of AUB, improve QOL, and potentially avoid or delay the hysterectomy.

With changing times, there has been a shift in focus toward improving QOL while treating any ailment and reducing hospital stay for patients. Minimally invasive therapeutic tools such as operative hysteroscope have been introduced with the aim of reducing the morbidity associated with more traditional open approaches apart from having comparable result of improving QOL in shorter duration. Still, gynecologists and patients suffering from HMB/AUB are reluctant to choose conservative surgical modalities with the doubt of efficacy of hysteroscopic therapy and fear of persistence of symptoms.

Expectation of women while choosing surgical treatment option for HMB/AUB is definitive improvement in menstrual symptoms and improvement of QOL without serious adverse events. This study helps to assess and compare the above important aspects of two main surgical treatment modalities when they are chosen as therapeutic method for treatment of AUB/HMB.

In the present study, we aimed to study and compare change in postoperative QOL between hysteroscopy as an alternative conservative surgical procedure and popularly chosen radical therapeutic modality of hysterectomy when used as therapeutic modality for the management of AUB/HMB.

Aim

We aimed to study and compare hysteroscopic therapy with hysterectomy in terms of change in early and late postoperative QOL when used for surgical management of HMB/AUB.

Objective

To study and compare between changes in QOL of women when hysteroscopic therapeutic procedures or hysterectomy was used as therapeutic procedure for the management of HMB/AUB.

METHODS

Type of the study

Cross-sectional study.

Duration of the study

December 2015 to March 2018.

Study setting

Department of Obstetrics and Gynecology in a rural setting in Wardha district of Maharashtra, India. The study was approved by the institutional ethics committee.

Inclusion criteria

Women who underwent hysterectomy and hysteroscopy with the following characteristics: women of reproductive and premenopausal age group with HMB (including both heavy regular periods (menorrhagia) and heavy irregular periods [metrorrhagia]), measured objectively or subjectively refractory to medical treatment. Women having normal or bulky uterus, hyperplasia, endometrial polyp submucous fibroid <5 cm on ultrasound, or previous hysteroscopy finding intended to be treated by hysteroscopic procedure.

Exclusion criteria

Hysterectomy done for large pelvic masses, adenomyosis, and large fibroids (>5 cm other than submucous variety and pelvic malignancies or for premalignant conditions). Hysteroscopy done for other indications such as infertility and recurrent pregnancy loss. Hysteroscopy suspicious of endometrioid neoplasia, adenomyosis, or malignancy. Patient desiring pregnancy in future. Patients who refused for follow-up survey, associated cervical lesions, and postmenopausal women.

Types of interventions done for the management of abnormal uterine bleeding

- Group I – Hysteroscopic surgical procedure – polypectomy, endometrial resection, myomectomy
- Group II – Hysterectomy – abdominal hysterectomy, vaginal hysterectomy, laparoscopic hysterectomy.

Outcomes

Assessment of effectiveness, safety, and change in QOL in both groups.

Types of outcome measures

Quality of life

QOL was assessed through a structured questionnaire and a semi-structured interview with the patient. Short form 36 (SF 36) questionnaire was used to assess QOL in preoperative period, early postoperative period (on 7th postoperative day), and late postoperative period at 6 months and 1 year postoperatively. Mean change in QOL was assessed and compared in both groups.

RESULTS

Sociodemography

In the present study, a total of 354 women 178 women who underwent hysteroscopic guided therapy while 176 women who underwent hysterectomy as therapeutic option for HMB/AUB fitting into inclusion and exclusion criteria were studied and analyzed.

Surgical procedure details

Women in Group 1 had undergone hysteroscopic therapeutic surgical procedure (polypectomy, endometrial resection, myomectomy) while women in Group 2 had undergone hysterectomy—(abdominal hysterectomy, vaginal hysterectomy, laparoscopic hysterectomy). All surgical procedures were done by same gynaecologic surgeon. Regional anaesthesia was used.

DISCUSSION

HMB, which includes both menorrhagia and metrorrhagia, is an important cause of ill health in women. The definitive treatment is hysterectomy, but this is a major surgical procedure with significant physical and emotional complications, as well as social and economic costs. Several less invasive surgical techniques (e.g., transcervical resection of the endometrium [TCRE], laser approaches) and various methods of endometrial ablation have been developed with the purpose of improving menstrual symptoms by removing or ablating the entire thickness of the endometrium. The present study was aimed at comparing the effectiveness, safety, and change in QOL of women undergoing hysteroscopic therapy for AUB when compared with hysterectomy.

During the study period, the overall incidence of HMB or AUB who presented for gynecologic consultation in the study age group was 24.4%.

As shown in Table 1, the mean age in hysteroscopy group was 39.66 years while in hysterectomy group, it was 40.19 years. In a study by Pratibha Singh of AUB, the reported incidence is as follows. In the 46–50 years' age group, it was 40% followed closely by 41–45 years' age group (25.2%), concluding that the age group between 41 and 50 years comprised most of our patients (65%).^[1] Sinha *et al.* in their study use of hysteroscopy in AUB: an edge over histopathological examination had mean age of patients as 36.4 ± 7.6 years.^[2]

As shown in Table 2, most of women in our study in the hysteroscopy group (32.02%) had menorrhagia followed by 34.27% menometrorrhagia, 32.58% metrorrhagia, and only 1.12% polymenorrhea, while it was 26.14%, 33.52%, 36.93%, and 3.41%, respectively, in hysterectomy group. Harlow and Campbell reported that approximately 4%–8% of women report having menstrual periods longer than 7–8 days when interviewed. The prevalence of AUB was higher when women were interviewed by a physician, with 15% of women being diagnosed with menorrhagia.^[3]

The prevalence of AUB was higher when women were interviewed by a physician, with 15% of women being diagnosed with menorrhagia; 7% and 15% report profuse bleeding to a physician in India as reported by Duggal *et al.*^[4]

As shown in Tables 3 and 4, in the hysteroscopy group, of 178 cases, 61 (34.26%) patients had TCRE as therapeutic procedure, 80 (44.94%) had polypectomy while 24 (13.48%) had TCRE with polypectomy; 13 (16.66%) underwent myomectomy. In the hysterectomy group, of 176 cases, 111 (66.29%) hysterectomies were done by abdominal route, 27 (15.43%) were done by vaginal route while 32 (18%) were done by laparoscopic route.

Quality of life

As shown in Table 5, all women in the study group had poor QOL SF 36 scores in all 8 domains in both groups before surgery. The mean scores in physical health, role limitation due to physical health, role limitation due to emotional problems, fatigue, emotional well-being, social functioning, pain, and general health were 33.22 (11.48), 23.78 (19.76), 10.299 (16.23), 24.95 (5.16), 44.58 (9.81), 25.28 (11.42), 26.896 (10.26) and 50.895 (21.66), respectively, in hysteroscopy group while in hysterectomy group, they were 32.14 (12.106), 19.93 (20.25), 14.58 (19.73), 23.92 (4.77), 39.84 (9.39), 21.306 (13.84), 27.44 (10.05), and 49.59 (19.06), respectively.

On 7th postoperative day, we assessed QOL (SF 36 score) in both groups to check change in QOL score in both study in early post operative period and compared it for any statistical significance. There was a significant difference (all domains $P < 0.05$) in mean change in QOL on 7th postoperative day between the two

Table 1: Distribution of age in both groups

Hysteroscopy		Hysterectomy		P	CI
Observation	Mean (SD)	Observation	Mean (SD)		
178	39.66 (7.40)	176	40.19 (4.28)	0.41	39.29-40.56

SD: Standard deviation, CI: Confidence interval

Table 2: Distribution of women as per menstrual complaints

Menstrual abnormalities	Frequency (%)	
	Hysteroscopy	Hysterectomy
Menorrhagia	57 (32.02)	46 (26.14)
Menometrorrhagia	61 (34.27)	59 (33.52)
Metrorrhagia	58 (32.58)	65 (36.93)
Polymenorrhea	2 (1.12)	6 (3.41)

Table 3: Type of hysteroscopic procedures

Procedure (total number)	Frequency (%)
TCRE (61)	85 (47.75)
Polypectomy (80)	80 (44.94)
Myomectomy (13)	13 (7.30)

TCRE: Transcervical resection of the endometrium

Table 4: Type of hysterectomies done

Type of hysterectomy	Frequency (%)
TAH	116 (66.29)
VH	27 (15.43)
TLH	32 (18.29)

TLH: Total laparoscopic hysterectomy, TAH: Total abdominal hysterectomy, VH: Vaginal hysterectomy

groups, with hysteroscopy group having better scores. Postoperatively, the mean change in QOL SF 36 score in the following domains of physical health role limitation due to physical health, role limitation due to physical health, role limitation due to emotional problems, fatigue, emotional well-being, social, functioning pain, and general health was (19.76), 89.7 (16.23), 56.61 (9.09), 36.24 (10.67), 63.79 (12.92), 60.09 (13.1), and 41.99 (21.28) for hysteroscopy group while in the hysterectomy group, they were 12.18 (10.04), 3.97 (20.48), 8.52 (15.42), 1.85 (3.04), 6.09 (12.09), 7.81 (12.79), -3.26 (6.42), and 6.32 (9.79), respectively.

At 6 months postoperatively, the mean change in QOL SF 36 score in the following domains of physical health role limitation due to physical health, role limitation due to emotional problems, fatigue, emotional well-being, social functioning, pain, and general health were 45.16 (16.95), 77.05 (21.90), 86.55 (21.95), 61.95 (9.86), 46.11 (14.90), 69.17 (19.17), 66.17 (17.45), and 42.23 (27.39), respectively, in the hysteroscopy group, while in the hysterectomy group, they were 31.48 (14.66), 30.77 (28.13), 53.17 (29.86), 46.50 (9.77), 27.07 (13.04), 35.25 (16.46), 43.04 (12.46), and 22.04 (19.45), respectively, ($P < 0.05$); this depicts that QOL in the hysteroscopy group was significantly better than that in hysterectomy group.

Similarly as shown in Table 6, the change in QOL at 1-year follow-up in the following domains of

Table 5: Preoperative quality of life score and change in quality of life scores on 7th postoperative day and at 6 months follow-up

Domains	Preoperative score in both groups with P and 95% CI, mean (SD)		Score on 7 th postoperative day in both groups with P and 95% CI		Score 6 months postoperative day in both groups with P and 95% CI	
	Hysteroscopy preoperative SF 36 score	Hysterectomy preoperative (<0.05 s) P	Hysteroscopy score mean change (SD)	Hysterectomy SF 36 score mean change (SD)	Hysteroscopy mean change (SD)	Hysterectomy P mean change (<0.05 s) (SD)
Physical health	33.22 (11.48)	0.39	41.89 (17.62)	12.18 (10.04)	45.27 (16.65)	31.48 (14.66)
Role limitation due to physical health	23.78 (19.76)	0.71	76.21 (19.76)	3.97 (20.48)	77.05 (21.90)	30.77 (28.13)
Role limitation due to emotional problems	10.299 (16.23)	0.76	89.7 (16.23)	8.52 (15.42)	86.55 (21.95)	53.17 (29.86)
Fatigue	24.95 (5.16)	0.51	56.61 (9.09)	1.85 (3.04)	61.95 (9.86)	46.50 (9.77)
Emotional well-being	44.58 (9.81)	0.60	36.24 (10.67)	6.09 (12.09)	46.11 (14.90)	27.07 (13.04)
Social functioning	25.28 (11.42)	0.40	63.79 (12.92)	7.81 (12.79)	69.17 (19.17)	35.25 (16.46)
Pain	26.896 (10.26)	0.61	60.09 (13.1)	-3.26 (6.42)	66.17 (17.45)	43.04 (12.46)
General health	50.895 (21.66)	0.548	41.99 (21.28)	6.32 (9.79)	42.23 (27.39)	22.04 (19.45)

QOL: Quality of life, CI: Confidence interval, SD: Standard deviation, SF: Short form, S: Significant

Table 6: Preoperative quality of life score and change in quality of life scores at 1-year follow-up

Domains	QOL SF 36			
	Preoperative score in both groups with P value and 95% CI, mean (SD)		Score at 1-year postoperative follow-up in both groups with P and 95% CI	
	Hysterectomy preoperative SF 36 score	Hysterectomy preoperative CI	Hysterectomy score mean change (SD)	Hysterectomy SF 36 score mean change (SD)
Physical health	33.22 (11.48)	32.14 (12.106)	45.36 (16.61)	37.93 (14.45)
Role limitation due to physical health	23.78 (19.76)	19.93 (20.25)	77.05 (21.90)	36.96 (27.84)
Role limitation due to emotional problems	10.299 (16.23)	14.58 (19.73)	86.55 (21.95)	56.26 (30.57)
Fatigue	24.95 (5.16)	23.92 (4.77)	61.84 (9.85)	52.07 (9.55)
Emotional well-being	44.58 (9.81)	39.84 (9.39)	46.15 (14.92)	32.26 (13.53)
Social functioning	25.28 (11.42)	21.306 (13.84)	69.17 (19.17)	40.68 (17.21)
Pain	26.896 (10.26)	27.44 (10.05)	66.17 (17.45)	48.04 (12.91)
General health	50.895 (21.66)	49.59 (19.06)	42.43 (27.47)	27.30 (19.59)

QOL: Quality of life, CI: Confidence interval, SD: Standard deviation, SF: Short form, S: Significant

physical health role limitation due to physical health, role limitation due to emotional problems, fatigue, emotional well-being, social functioning, pain, and general health in hysteroscopy group was 45.36 (16.61), 77.05 (21.90), 86.55 (21.95), 61.84 (9.85), 46.15 (14.92), 69.17 (19.17), 66.17 (17.45), and 42.43 (27.47), while that in the hysterectomy group they were 37.93 (14.45), 36.96 (27.84), 56.26 (30.57), 52.07 (9.55), 32.26 (13.53), 40.68 (17.21), 48.04 (12.91), and 27.30 (19.59), respectively, with $P < 0.5$ suggesting at long-term follow-up that the hysteroscopy group had better QOL than the hysterectomy group.

Figure 1 shows progression of QOL from preoperative to early and late postoperative period in both groups as seen in this table in hysteroscopy group the improvement in QOL score is rapid and better than that seen in hysterectomy group. Dickerson *et al.* in their study studied women with dysfunctional bleeding, most of whom were younger than 45 years of age (85%) and were recruited from 25 clinical centers in United States and Canada. All women had poor QOL score preoperatively showing HMB affects QOL. At 24 months after the treatment, 94.4% and 84.9% of women randomized to hysterectomy and EA, respectively, considered their major problem to be solved; at 48 months, the numbers were similar at 98.0% and 85.1%. Postprocedure quality-of-life measures (SF-36) improved similarly in both groups. These findings are similar to our findings.

In a systematic review, Matteson *et al.* analyzed six studies which evaluated QOL. Overall, studies showed significant improvement above baseline in QOL scores after treatment with both ablation and hysterectomy. Several studies found no difference between treatment arms in scores on various validated QOL assessment tools. However, these studies were not powered to detect differences in QOL scores, and thus lack of statistical significance does not confirm no difference in effect. Three studies found statistically significant differences in various SF-36 dimensions favoring hysterectomy, namely general health, vitality, and social function except pain.^[5]

In a study done on long-term clinical and quality-of-life outcomes in endometrial resection versus vaginal hysterectomy for menorrhagia by Crosignani *et al.*, 41 individuals underwent endometrial resection and 44 underwent vaginal hysterectomy without major complications. Of the 77 women attending the 2-year follow-up visit, 33 of 38 (86.8%) in the endometrial resection arm were very satisfied or satisfied with the treatment compared with 37 of 39 (94.8%) of those in the hysterectomy arm. According to the SF 36 questionnaire, social functioning and vitality scores were significantly better in the hysterectomy group

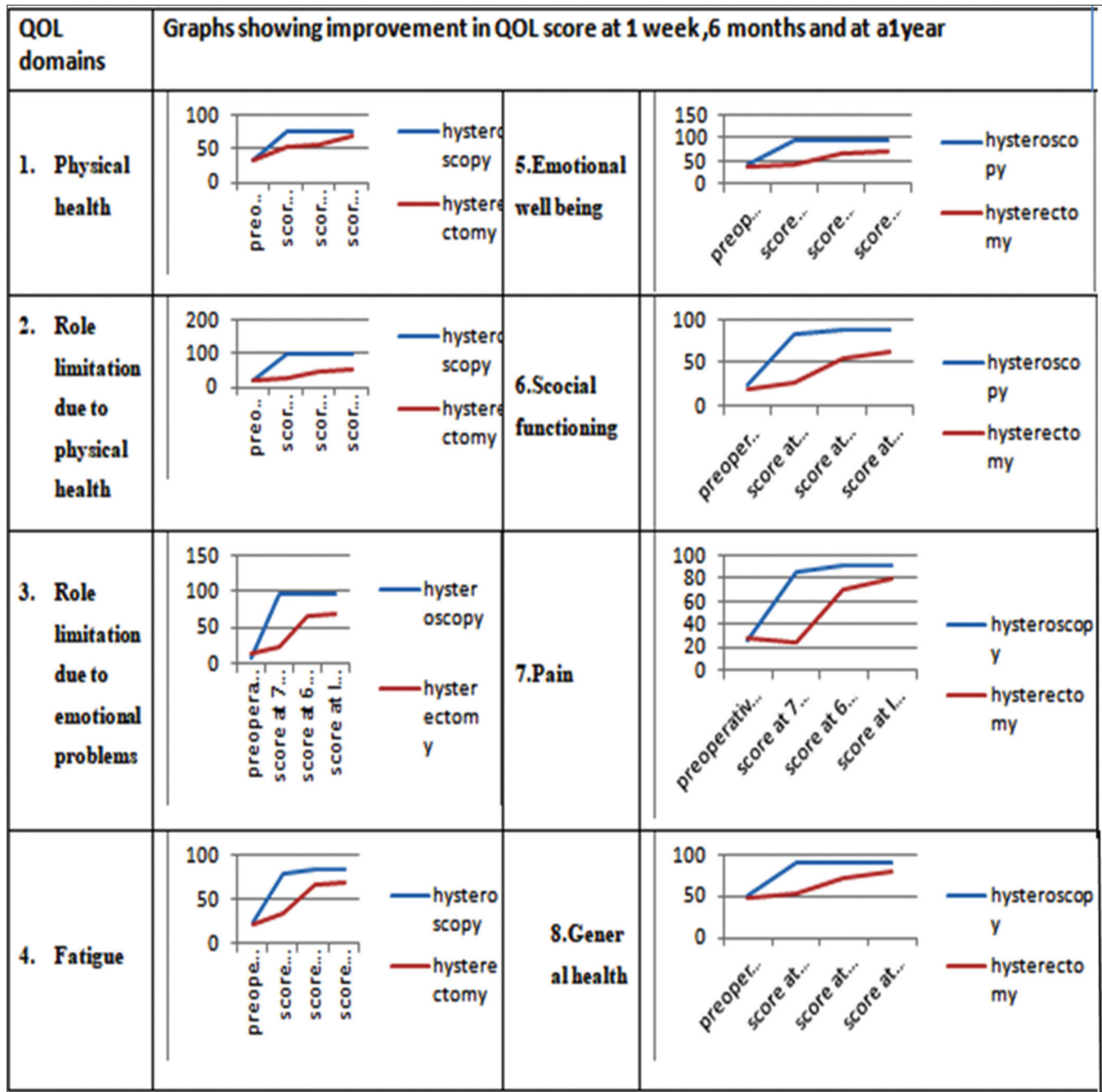


Figure 1: Graphs showing change on quality of life in all 8 domains at 1 week, 6 months, and 1 year postoperatively

than in the resection group.^[6] Our study evaluated QOL score at 6 months, and the mean change in scores was comparable in both groups.

Zupi *et al.* studied hysteroscopic endometrial resection versus laparoscopic supracervical hysterectomy for AUB for long-term follow-up of a prospective randomized trial. They reported a significant change in QOL SF 36 score in both mental and physical parameters in both scores in the long term.^[7] These findings are consistent with findings of our study.

Fergusson *et al.* reported on The Surgical Treatments Outcomes Project for Dysfunctional Uterine Bleeding: Summary of an Agency for Health Research and Quality-sponsored randomized trial of endometrial ablation versus hysterectomy for women with HMB and concluded that a greater proportion of those who had undergone a hysterectomy reported an improvement in their general health 1 year after surgery when compared with those who had received TCRE/ablation (RR 4.2). At 4 years, this difference

between groups had narrowed and was just outside the level of significance.

CONCLUSIONS AND IMPLICATIONS

HMB is a common cause of gynecologic consultation, with 24% incidence of all gynecologic consultations in our study period. Patients suffering from HMB have poor QOL. Both hysteroscopic procedures and hysterectomy when used as therapeutic modality for HMB improve QOL when used as therapeutic option. The improvement in QOL is significantly different at both short term and long term, i.e., at 1 week, 6 months, and at 1-year follow-up after surgery, QOL score is better in the hysteroscopy group when compared to the hysterectomy group, suggesting that apart from early improvement in QOL, hysteroscopic surgeries when used as therapeutic procedure for HMB/AUB have better QOL of life at long-term follow-up too when compared to that seen in hysterectomy. Hysteroscopic targeted therapies are better options than HMB/AUB with given set of indications.

Implication

In recent times, there has been a shift in focus toward organ preservation and treatment modalities improving QOL and reducing hospital stay for patients while choosing treatment options. Minimally invasive techniques have been introduced with the aim of reducing the morbidity associated with more traditional open approaches. Expectation of women while seeking treatment of HMB/AUB is mainly improvement in menstrual symptoms than actually removing the uterus. Most of these women are anxious about and want to avoid a major surgical procedure of hysterectomy. This study helps to prove that hysteroscopic surgical procedures improve QOL earlier than hysterectomy, and QOL scores are better in both short and long term which is a primary concern of women suffering from AUB/HMB and helps them spare or conserve the uterus with its lifelong benefits. This study suggests and recommends that hysteroscope is like gynecologist's stethoscope which permits full assessment of the endometrial cavity increasingly giving opportunity to operative hysteroscopy and ultimately to conserve the uterus and improve QOL. Thus, it should be used as the primary tool in the treatment of AUB/HMB, thereby avoiding or deferring hysterectomy and improving QOL which is the final goal of any treatment.

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Conflicts of interest

The authors whose names are listed immediately below certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or nonfinancial interest (such as personal or professional relationships, affiliations, knowledge, or beliefs) in the subject matter or materials discussed in this manuscript. The authors whose names are listed immediately below report the following details of affiliation or involvement in an organization or entity with a financial or nonfinancial interest in the subject matter or materials discussed in this manuscript.

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