

# Comparative study of peri and post-operative outcome in vaginal and abdominal hysterectomy

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## Abstract

**Background:** Hysterectomy is surgical removal of all or part of uterus. The first abdominal hysterectomy was performed by Charles Clay in Manchester in 1843. Vaginal hysterectomy dates back to ancient times. **Aims and Objectives:** To study of peri- and post-operative outcome in vaginal and abdominal hysterectomy. **Methodology:** After permission of institutional ethical committee this prospective observational study was carried out at Government Medical College, Latur. total 100 cases admitted to the Gynecology unit by simple random sampling method requiring hysterectomy for enlarged uteri were randomly selected out of which 50 cases underwent NDVH and 50 cases underwent total abdominal hysterectomy for same indications during the study period between June 2012 to November 2014. Statistical analysis was done by descriptive and inferential statistics using chi square test and students unpaired 't' test. Software used in analysis were SPSS 17.0 % version and graph pad prism 5.0 and  $p < 0.05$  was considered as level of significance. **Result:** The majority of the patients were from the age group of 41-50 yrs were 78.00%, followed by 31-40 yrs were 16.00%, 51-60 yrs were 6.00%. and it is also clear that both the group is having similar age group. The intraoperative complications were more common in the TAH group as compared to NDVH group ( $X^2$ -value=9.21,  $P < 0.05$ ). The post-operative complications were more common in the TAH group as compared to NDVH group (i.e.  $X^2=25.92$ ,  $P < 0.05$ ). The post operative ambulation was significantly more in the NDVH group as compared to TAH group (i.e.  $X^2=98$ ,  $P < 0.0001$ ). The mean hospital stay in the NDVH group was (mean  $\pm$  SD) in Days was  $6.52 \pm 0.68$  and for TAH was  $10.21 \pm 3.42$  this was statistically significant. ( $t=9.76$ ,  $P < 0.0001$ ). The Pre-op Hb. was not significantly different in both the groups (i.e.  $t=1.25$ ,  $P > 0.05$ ) the post-operative Hb. Concentration was significantly lower in the TAH group i.e.  $7.72 \pm 0.48$  as compared to NDVH i.e.  $8.54 \pm 0.32$  ( $t=10.10$ ,  $P < 0.01$ ). This indicates that blood loss was more in abdominal group. TAH required more Blood transfusion as compared to NDVH group (i.e.  $t=26.54$ ,  $p < 0.0001$ ). In this study need for post-operative blood transfusion was significantly more in abdominal group as compared to NDVH group. This indicates that blood loss was more in abdominal group. **Conclusion:** it can be concluded from our study that the vaginal hysterectomy was found superior to abdominal hysterectomy with respect to less intra operative and post-operative complications, mean less days hospital stay, less blood lost, less requirement of blood transfusion etc.

**Key words:** vaginal hysterectomy, NDVH (Non-descent vaginal hysterectomy), abdominal hysterectomy, TAH (Total abdominal hysterectomy), Outcome of hysterectomy.

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## INTRODUCTION

Hysterectomy is surgical removal of all or part of uterus. The first abdominal hysterectomy was performed by Charles Clay in Manchester in 1843. Vaginal hysterectomy dates back to ancient times. The procedure was performed by Soranus of Ephesus in 120 AD.

Advances in anaesthesia, transfusion services, surgical techniques and availability of antibiotics led to hysterectomy becoming the most common nonpregnancy related major surgical procedure in women. A total of 575,000 hysterectomies were done in year 2005 in US.<sup>1</sup> Nine out of every ten hysterectomies are performed for non-malignant diseases.<sup>2</sup> AH remains the predominant method of uterine removal. This route is used for malignancies, bulky uteri or when there are adhesions and removal of uterus is not possible through VH. Currently it exceeds VH by a ratio of 1:1 to 6:1 across North America<sup>3</sup>. VH was initially only used for prolapse, but its indications are now increasing. VH is accepted as less invasive than AH and there are reports of its preferential use as it has many advantages over AH<sup>4-6</sup>. LH requires greater surgical skills and takes longer than the other two

routes. There is greater danger of bladder or ureteric injury. Indications, of hysterectomy include Leiomyomas, endometriosis, uterovaginal (UV) prolapse (pelvic relaxation), pelvic inflammatory disease (PID), endometrial hyperplasia, dysfunctional/abnormal uterine bleeding (DUB), menorrhagia, dysmenorrhoea or pelvic pain associated with significant pelvic disease, intractable postpartum haemorrhage, ruptured tubo-ovarian abscesses, endometrial hyperplasia with atypia and malignancies such as cervical intraepithelial neoplasia or invasive disease<sup>7, 8</sup>. Surgical technique for vaginal myomectomy has now been described by posterior<sup>9</sup> as well as anterior route, 10 even for fibroids weighing up to 1,600 g 11. For DUB, hysterectomy is last treatment option for women who have completed childbearing, do not tolerate medical treatment or have atypical endometrial hyperplasia<sup>12</sup>. The selection of cases for VH or AH depends upon many clinical variables singly or in combination. These include pelvic anatomy, uterine size, adnexal disease, gastrointestinal complaints, urological disorders, (cystocele/prolapse of the urethrovesical angle, rectocele, enterocele), heart or lung disease, body mass index, parity, previous tubal ligation or caesarean section<sup>13</sup>. Hysterectomy is a reasonably safe, common, and routine surgical procedure which rarely leads to peri-operative death 2. Overall mortality rates for AH or VH are 0.1– 0.2% 14. This current study was undertaken to see peri- and post-operative outcome/ complications in vaginal versus abdominal hysterectomy

**Methodology :** After permission of institutional ethical committee this prospective observational study was carried out at Government Medical College, Latur. total 100 cases by simple random sampling method admitted to the Gynecology unit requiring hysterectomy for enlarged uteri were randomly selected out of which 50 cases underwent NDVH and 50 cases underwent total abdominal hysterectomy for same indications during the study period between June 2012 to November 2014. Patients with uterine size not exceeding 12 weeks of gravid uterus, adequate uterine mobility, fibroid uterus, dysfunctional uterine bleeding, chronic cervicitis, adenomyosis, laparoscopic assisted vaginal hysterectomy(LAVH), Patients with previous 2 or more LSCS were included into the study while uterine size more than 12 weeks of gravid uterus, restricted uterine mobility, pelvic organ prolapse, patients with complex adnexal mass were excluded from the study. Before surgery, every patient is clinically evaluated and investigated, The investigations include: Hemoglobin, Urine analysis for albumin, sugar, microscopy, Blood group and Rhtyping, Blood sugar, blood urea, serum creatinine, HIV, HbsAg, Chest X-ray, ECG, USG-abdomen and pelvis, Pap smear. Written informed

consents were taken from all patients after explaining the procedure. Every patient was completely evaluated by an anesthesiologist before deciding the type of anesthesia, Spinal anesthesia was used in most cases, Vaginal hysterectomy was done by Haeney's technique, For abdominal hysterectomy, asuprapubic transverse incision was given, Operating time for vaginal hysterectomy was calculated from incision atCervico vaginal junction to the completion of closure of vault .Operating time for abdominal hysterectomy was calculated from incision on the abdomen oclosure of skin incision. Sample size was calculated by considering allowable error of 20%

$$N = \frac{4pq}{L^2}$$

## RESULTS

**Table 1:** Distribution of the patients as per the age

Age Group(yrs)	NDVH	TAH	Total No.	Percentage
31-40 yrs	8	9	17	16.00
41-50 yrs	39	35	74	78.00
51-60 yrs	3	6	9	6.00
<b>Total</b>	<b>50</b>	<b>50</b>	<b>100</b>	<b>100</b>

From above table it is clear that majority of the patients were from the age group of 41-50 yrs were 78.00% , followed by 31-40 yrs were 16.00%, 51-60 yrs were 6.00%. and it is also clear that both the group is having similar age group.

**Table 2:** Comparison of intraoperative complications in both the groups

Intraoperative Complications	NDVH	TAH	X <sup>2</sup> -value	p-value
None	48(98%)	39(76%)		
Bowel	0(0%)	1(2%)		
Bladder	0(0%)	2(4%)	9.21	P<0.05
Adhesion	2(2%)	8(16%)		
<b>Total</b>	<b>50(100%)</b>	<b>50(100%)</b>		

From above Table it is clear that the intraoperative complications were more common in the TAH group as compared to NDVH group (X<sup>2</sup>-value=9.21,P<0.05)

**Table 3:** Comparison of postoperative complications in both the groups

Postoperative Complications	NDVH	TAH	X <sup>2</sup> -value	p-value
None	35(70%)	15(30%)		
Febrile morbidity	7(14%)	13(24%)		
Urinary tract infection (UTI)	3(6%)	2(4%)		
Respiratory tract infection	4(8%)	5(10%)	25.92	P< 0.005
Paralytic ileus	1(2%)	4(8%)		
Wound Infection	0(0%)	12(24%)		
<b>Total</b>	<b>50(100%)</b>	<b>50(100%)</b>		

From above table it is clear that the post-operative complications were more common in the TAH group as compared to NDVH group (i.e.  $X^2=25.92$ ,  $P<0.05$ )

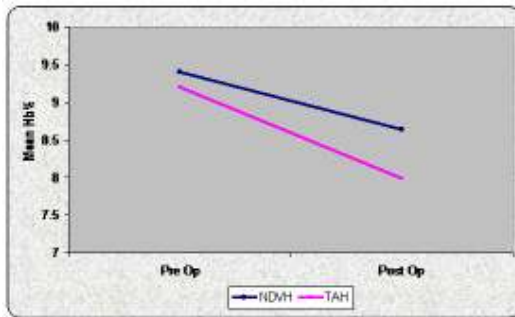
**Table 4:** Comparison of post operative ambulation(days) in both the groups

Post Op Ambulation	NDVH	TAH	$X^2$ -value	p-value
After 24 hrs	48 (%)	0(0%)	98	p<0.0001 Significant
After 48 hrs	2(4%)	50(100%)		
<b>Total</b>	<b>50(100%)</b>	<b>50(100%)</b>		

The post operative ambulation was significantly more in the NDVH group as compared to TAH group (i.e.  $X^2=98$ ,  $P<0.0001$ )

**Table 4:** Comparison of hospital stay(days) in both the groups

Group	Mean Hospital Stay(days)	SD	t-value	p-value
NDVH	6.52	0.68	9.76	P<0.0001
TAH	10.21	3.42		



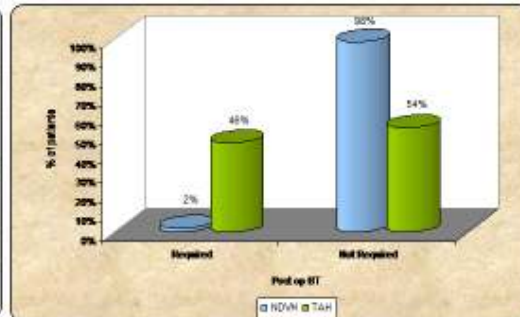
**Graph 1:** Comparison of post operative Hb% in two groups

The mean hospital stay in the NDVH group was (mean ± SD) in Days was  $6.52 \pm 0.68$  and for TAH was  $10.21 \pm 3.42$  this was statistically significant. ( $t=9.76$ ,  $P<0.0001$ )

**Table 5:** Comparison of Hb% in two groups

Group	Pre Op	Post Op
NDVH	9.52 ± 0.43	8.54 ± 0.32
TAH	9.49 ± 0.32	7.72 ± 0.48
t-value	1.25	10.10
p-value	P > 0.05	p < 0.01

From above table it is clear that the Pre-op Hb. was not significantly different in both the groups (i.e.  $t=1.25$ ,  $P>0.05$ ) the post-operative Hb. Concentration was significantly lower in the TAH group i.e.  $7.72 \pm 0.48$  as compared to NDVH i.e.  $8.54 \pm 0.32$  ( $t=10.10$ ,  $P<0.01$ ). In this study both groups were comparable with respect to pre-operative Hb. However postoperative fall in Hb in abdominal group was drastic as compare to NDVH group. Difference between pre-operative and post-operative Hb in both groups was statistically significant. This indicates that blood loss was more in abdominal group.



**Graph 2:** Comparison of post op Blood Transfusion(BT) in both the groups

**Table 6:** Comparison of post op Blood Transfusion(BT) in both the groups

Post op BT	NDVH	TAH	t-value	p-value
Required	10(2%)	23(46%)	26.54	p<0.0001 Significant
Not Required	49(98%)	27(54%)		
<b>Total</b>	<b>50(100%)</b>	<b>50(100%)</b>		

From above table it is clear that TAH required more Blood transfusion as compared to NDVH group (i.e.  $t=26.54$ ,  $p<0.0001$ ) In this study need for post-operative blood transfusion was significantly more in abdominal group as compared to NDVH group. This indicates that blood loss was more in abdominal group.

**DISCUSSION**

VH is accepted as less invasive than AH and there are reports of its preferential use as it has many advantages over AH. <sup>14-16</sup> LH requires greater surgical skills and takes longer than the other two routes. There is greater danger of bladder or ureteric injury. Indications, of hysterectomy include Leiomyomas, endometriosis, uterovaginal (UV) prolapse (pelvic relaxation), pelvic inflammatory disease (PID), endometrial hyperplasia, dysfunctional/abnormal uterine bleeding (DUB), menorrhagia, dysmenorrhoea or pelvic pain associated

with significant pelvic disease, intractable postpartum haemorrhage, ruptured tubo-ovarian abscesses, endometrial hyperplasia with atypia and malignancies such as cervical intraepithelial neoplasia or invasive Disease.<sup>17,18</sup> In our study we have found that that majority of the patients were from the age group of 41-50 yrs were 78.00% , followed by 31-40 yrs were 16.00%, 51-60 yrs were 6.00%. and it is also clear that both the group is having similar age group. The intraoperative complications were more common in the TAH group as compared to NDVH group ( $X^2$ -value= $9.21$ ,  $P<0.05$ ) . The



post-operative complications were more common in the TAH group as compared to NDVH group (i.e.  $X^2=25.92$ ,  $P<0.05$ ). The post operative ambulation was significantly more in the NDVH group as compared to TAH group (i.e.  $X^2=98$ ,  $P<0.0001$ ). The mean hospital stay in the NDVH group was (mean  $\pm$  SD) in Days was  $6.52 \pm 0.68$  and for TAH was  $10.21 \pm 3.42$  this was statistically significant. ( $t=9.76$ ,  $P<0.0001$ ). The Pre-op Hb. was not significantly different in both the groups (i.e.  $t=1.25$ ,  $P>0.05$ ) the post-operative Hb. Concentration was significantly lower in the TAH group i.e.  $7.72 \pm 0.48$  as compared to NDVH i.e.  $8.54 \pm 0.32$  ( $t=10.10$ ,  $P<0.01$ ), This indicates that blood loss was more in abdominal group. TAH required more Blood transfusion as compared to NDVH group (i.e.  $t=26.54$ ,  $p<0.0001$ ). In this study need for post-operative blood transfusion was significantly more in abdominal group as compared to NDVH group. This indicates that blood loss was more in abdominal group.

These findings are similar to Nasira Sabiha Dawood *et al*<sup>19</sup> they found There were no differences in the patients' mean age, parity, body mass index, and preoperative haemoglobin levels between groups. Vaginal hysterectomy was associated with less febrile morbidity, wound infection operative time, economic cost, bleeding requiring transfusion and re-admission than abdominal hysterectomy. Main indication for women having abdominal operation was leiomyomas, whereas more women having uterovaginal prolapse had vaginal hysterectomy.

Also similar to Md. Akbar Hossain<sup>20</sup> they found of 305 patients. 199 patients underwent AH and 106 patients underwent VH. Baseline characteristics were similar between the two groups. Mean operative time was  $95.78 \pm 18.46$  minutes for AH group and  $76.26 \pm 19.24$  minutes for VH group ( $p<0.05$ ). Furthermore there was no wound infection; paralytic ileus and no need to reopening any patient in case of VH group compared to AH group.

## CONCLUSION

It can be concluded from our study that the vaginal hysterectomy was found superior to abdominal hysterectomy with respect to less intra operative and post-operative complications, mean less days hospital stay, less blood lost, less requirement of blood transfusion etc.

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