

## “STUDY OF MORBIDITY IN ABDOMINAL HYSTERECTOMY VERSUS VAGINAL HYSTERECTOMY”

Dr. Rita D.<sup>1</sup> and Dr. A. Prajwala<sup>2\*</sup>

<sup>1</sup>HOD & Professor, Department of OBG, NMCH &RC, RGHUS, India.

<sup>2</sup>Junior Resident Department of OBG, NMCH&RC/RGHUS, India.

Received date: 16 April 2021

Revised date: 06 May 2021

Accepted date: 27 May 2021

\*Corresponding author: Dr. A. Prajwala

Junior Resident Department of OBG, NMCH&RC/RGHUS, India.

### ABSTRACT

**Background and objectives:** Hysterectomy is one of the most common gynaecological surgery performed. We designed this study to focus on morbidity in women who underwent Hysterectomy. **Methods:** This is a prospective cohort study conducted from November 2018 to October 2019 at NMCH & RC, Raichur, Total 100 cases, including 50 cases each of abdominal and vaginal hysterectomies done for various indications. Results: There was a statistically significant drop in Haemoglobin by 0.494 gm/dl and PCV by 1.4% after Abdominal Hysterectomy (AH) from pre operative levels. 4 patients among AH group had vault collections, but none among Non descent vaginal hysterectomy (NDVH). Mean time to ambulation, duration of post op hospital stay was lesser in Vaginal Hysterectomy (VH) group as compared to AH. Conclusion: Uterine fibroids is most common indication for hysterectomy in our institution. NDVH is found to be safer and effective as compared to AH.

**KEYWORDS:** Abdominal Hysterectomy (AH), Vaginal Hysterectomy (VH), Non descent vaginal hysterectomy (NDVH), Morbidity.

### I. INTRODUCTION

Hysterectomy is one of the most common surgeries done on women next to caesarean section.<sup>[1]</sup> The approaches to hysterectomy<sup>[2]</sup> for benign disease are abdominal hysterectomy, vaginal hysterectomy, laparoscopic hysterectomy and robotic-assisted hysterectomy.<sup>[3]</sup>

Hysterectomy is usually performed for problems including uterine fibroids, endometriosis, adenomyosis, utero vaginal prolapse, abnormal menstrual bleeding, and at least three forms of cancer (uterine, cervical, ovarian).<sup>[4,5]</sup> Though vaginal hysterectomy was done centuries before abdominal hysterectomy, abdominal route of surgery was perfected, fine tuned, for almost all indications. Since the time of its discovery the sole indication of vaginal hysterectomy, prolapsed uterus is even now the prime indication for vaginal hysterectomy. Benign conditions such as uterine fibroids, abnormal uterine bleeding, and endometriosis account for 85–90% of hysterectomies, with the remainder performed to prevent, or treat cancer.<sup>[6]</sup>

The incidence of hysterectomy varies from place to place depending upon the clinical and clinician factors<sup>[7]</sup> like

surgeon's personal preferences, personal comfort, and their analytical, institutional rules (so called protocols).

While patient preferences like less pain, no visible scar, lesser complications, lesser hospital stay, lesser expenditures on hospital bills are summarily neglected while choosing abdominal route. Vaginal hysterectomy, with wider indications, safety and advantages to patients and the enthusiasm with which it is being chosen even in non-descent uterus makes it rediscovered route of surgery. And the term 'rediscovery of vaginal hysterectomy' is justified when we review abounding medical literature. To apply for wide range of indications and to make it still safer, comparative studies, guidelines and refinement of techniques are desired.

Most common histopathological diagnoses reported in hysterectomy specimens are leiomyoma, adenomyosis and endometrial hyperplasia.<sup>[8]</sup>

The incidence of leiomyoma is about 20% in reproductive age group and increases with age.<sup>[9]</sup>

Clarke-Pearson *et al*<sup>[10]</sup> in their study categorized the most common complications of hysterectomy as

infectious, venous thromboembolic, genitourinary (including ureter and bladder injury) and gastrointestinal (intestinal and rectal injury) tract injury, bleeding, nerve injury, and vaginal cuff dehiscence. Infectious complications after hysterectomy range from 10.5% for abdominal hysterectomy. ACOG also acknowledges that the choice of approach should be based on the surgical indication, the patient's anatomic condition, and data supporting the approach, informed patient preference, and the surgeon's expertise and training.

## II. MATERIALS AND METHODS

**a. Source of data** All patients admitted for hysterectomy meeting the inclusion and exclusion criteria during November 2018 to October 2019 (1 year) in Navodaya Medical college hospital and research center, Raichur.

**b. Study design** Prospective study.

**c. Inclusion criteria** Fibroid uterus Abnormal uterine bleeding Chronic cervicitis Adenomyosis. Endometriosis Pelvic inflammatory disease Prolapsed uterus.

**d. Exclusion criteria** Genital malignancy Bleeding diathesis.

**f. Methods of collection of data** After obtaining ethical committee clearance from our institution, Written informed consent was taken from patient for pre-operative evaluation, surgical procedure, post operative evaluation and willingness to participate in study. Approved proformas were used for collecting demographic data, clinical data, preoperative evaluation,

intra-operative observations, post-op complications, sonographic findings.

**g. Pre operative evaluation: History Clinical examination:-** General examination Per abdomen examination Pelvic examination Investigations: Haemoglobin, Total leucocyte count, Differential count, Platelet count, Blood group and Rh typing, RFT, HbsAg, HIV, LFT, Thyroid profile, Serum electrolytes, Coagulation profile, Chest X-ray and ECG. PAP smear/ Endometrial biopsy if indicated Pre anesthetic evaluation for fitness.

**h. Operative intervention:** Patients were subjected to either abdominal or vaginal hysterectomy or NDVH. The steps of surgery, pre and post operative care were as per Institution's standard protocols as described below: After a proper preoperative evaluation with clinical and laboratory investigations and after getting informed consent, patients were selected for the study and were studied as GROUP A and GROUP B Before surgery patients were prepared. All patients were given prophylactic antibiotics in the form of injection Cefotaxim 1 gm i.v. just before surgery. All cases were done under either spinal or epidural anaesthesia.

**i. Data collection:** All data of patients were collected in approved proformas. Later relevant data for analysis and comparison were reorganized in to Microsoft excel data sheet format.

**j. Statistical analysis:** data was analysed using IBM SPSS 20 software. Chi-squared test and Independent t test were used.

## III RESULTS

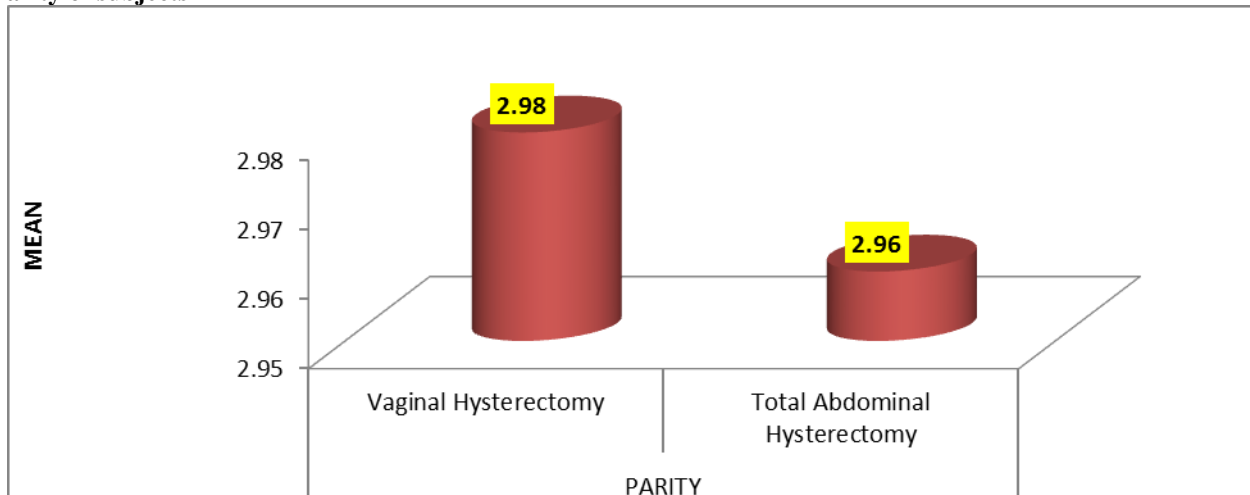
### Age of the subjects

**Table 1: Age wise distribution of study subjects.**

AGE	TYPE OF SURGERY				TOTAL		CHI-SQUARE VALUE	P VALUE
	Vaginal Hysterectomy		Total Abdominal Hysterectomy					
	NO	%	NO	%	NO	%		
<= 35	6	12	1	2	7	7	4.088	0.13
36 - 45	30	60	31	62	61	61		
> 45	14	28	18	36	32	32		
<b>TOTAL</b>	50	100	50	100	100	100		

Mean age in AH Group: 36.38+7.1years (mean + 2 sd), Mean age in VH Group: 36.74+6.58 (mean + 2 sd). When age group wise distribution of study subjects were analysed more number of patients belonged to age group 36-45 years. (AH- 62%, VH-60%)

**Parity of subjects**



**Figure 1: Parity wise distribution of study subjects.**

Mean parity in AH group: 2.96 + 1.17 (mean + 2 sd), maximum parity being 5 in 4 women and minimum being one.

maximum parity being 5 in 2 women and one women was nulliparous.

Mean parity in VH group: 2.98+1.78 (mean + 2 sd),

2 groups for parity with independent t test revealed no significant difference between groups with p value 0.948(p < 0.05 is statistically significant).

**Body mass index (bmi)**

**Table 2: Body mass index wise distribution of study subjects.**

	TYPE OF SURGERY	N	Mean	Std. Deviation	Std. Error Mean	t ' Value	P Value
<b>BMI</b>	Vaginal Hysterectomy	50	2.12	0.385	0.055	2.411	<b>0.018</b>
	Total Abdominal Hysterectomy	50	1.98	0.141	0.02		

Mean BMI for AH group was 21.8 + 2.3 (mean + 2 sd), with maximum being 28.5 and minimum being 19. Mean BMI for VH group was 21.7 + 1.5 (mean + 2 sd), with maximum being 24.5 and minimum being 17.1.

2 groups for BMI with independent t test revealed no significant difference between groups with p value 0.92 (p < 0.05 is statistically significant).

**Pre-operative hemoglobin & packed cell volume (pcv)**

**Table 3: Pre-operative hemoglobin & packed cell volume (pcv).**

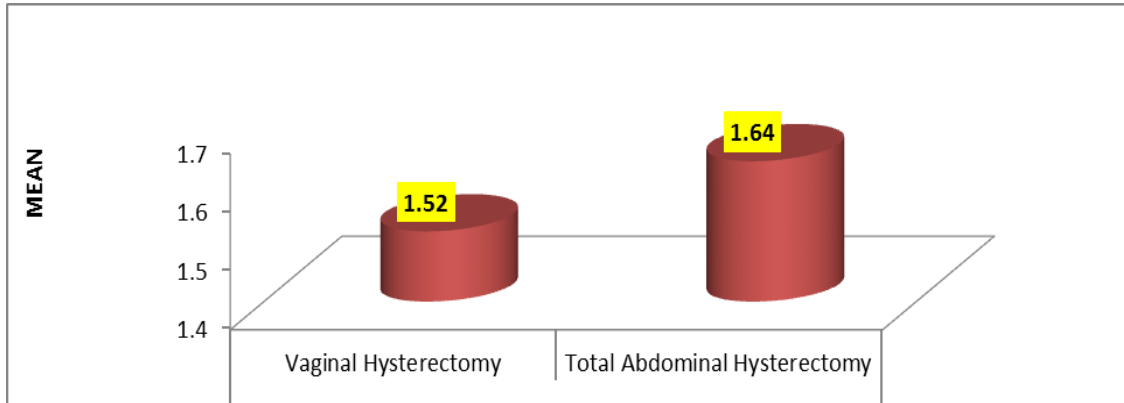
	TYPE OF SURGERY	N	Mean	Std. Deviation	Std. Error Mean	t ' Value	P Value
<b>Hb</b>	Total abdominal Hysterectomy	50	11.224	1.283	0.181	0.188	0.851
	Vaginal Hysterectomy	50	11.174	1.375	0.194		
<b>PCV</b>	Total abdominal Hysterectomy	50	32.62	4.12998	0.58407	1.476	0.143
	Vaginal Hysterectomy	50	31.48	3.57565	0.50567		

For VH group Mean HB & PCV were 11.174+ 1.375 gm/dl & 31.48+3.57 % (mean + 2 sd) respectively, with maximum HB 14.2 gm/dl and PCV 44% and minimum HB 9.1gm/dl and PCV 23%. For AH group Mean HB & PCV were 11.224 + 1.283 gm/dl & 32.62+4.12 % (mean + 2 sd) respectively, with

maximum HB 13.5 gm/dl and PCV 38% and minimum HB 9.2gm/dl and PCV 27%.

2 groups for pre-operative HB& PCV with independent t test revealed no significant difference between groups with p value 0.851 and 0.143 respectively (p < 0.05 is statistically significant)

**Uterine size**



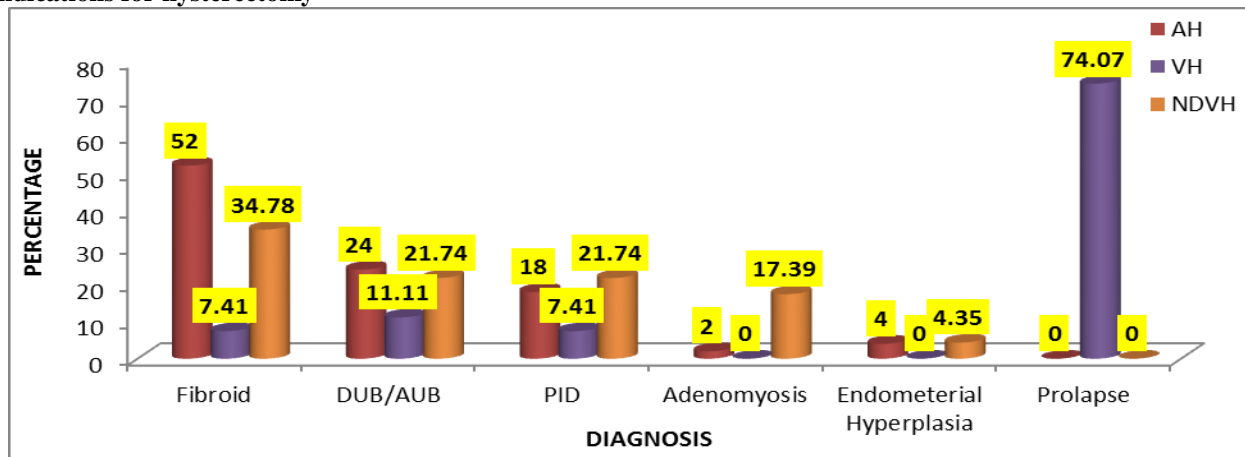
**Figure 2: Uterine size wise distribution of study subjects.**

Pre-operative USG revealed, Mean uterine size in AH group (study group A) 100.96+37.5 cm<sup>3</sup> (mean + 2 sd), maximum size 211 cm<sup>3</sup> and minimum 74cm<sup>3</sup>.

significant difference is present when independent t test was applied. The p value 0.15 (p < 0.05 is statistically significant), suggests uterine size of patients was similar in both groups.

Pre-operative USG revealed, Mean uterine size in VH group (study group B) 90.87+31.7 cm<sup>3</sup> (mean + 2 sd), maximum size being 211 cm<sup>3</sup> and minimum 58 cm<sup>3</sup>. 2 groups in terms of uterine size shows that no

**Indications for hysterectomy**

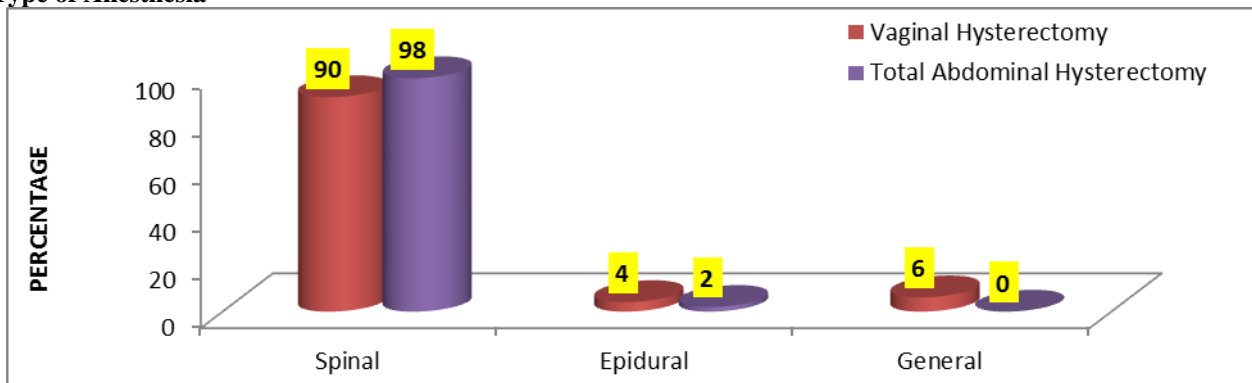


**Figure 3: Indications wise distribution of study subjects.**

Most common indication for hysterectomy was fibroids 52% in AH (Group A).

Most common indication for hysterectomy was Prolapse 74% in VH (Group B)

**Type of Anesthesia**



**Figure 4: Anaesthesia wise distribution of study subjects.**

All the patients were operated on either spinal anesthesia (94%) or on epidural anesthesia (3%) or on general anaesthesia(3%).

No significant difference between 2 groups in terms of anesthesia used (p value 0.173 by chi square test).

**Techniques for removal of uterus**

In all cases of AH GROUP uterus was removed enmass but in 2 cases of VH Group uterus was removed after bisection for removing it through vagina.

**Oophorectomy**

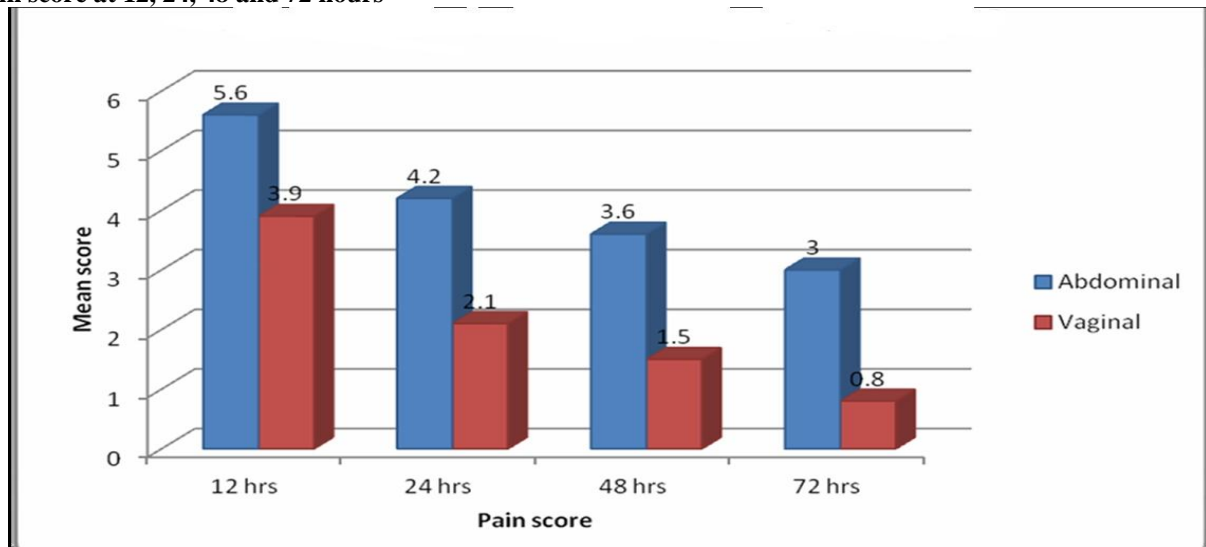
Oophorectomy was done in 2 cases of AH group and one case among VH group.

**Intra-operativeinjury**

There were 1 case intra-operative bladder injury among AH GROUP and 2 in VH GROUP.

**Post-operative characteristics**

**Pain score at 12, 24, 48 and 72 hours**



**Figure 5: Pain score wise distribution of study subjects.**

Pain score evaluated at 12, 24, 48, 72 hours for each group shows mean pain score was less in VH group in comparison with AH group with p value statistically significant.

determined by chi square test revealed no statistical significance (p =0.12).

**Post-operative urinary and bowel complications**

Three women among AH group had dysuria post-operatively and one had hematuria but none of the women in VH group had any urinary complications. But this was not statistically significant as p value

None of the women in both groups had any bowel complaints or complications post- operatively.

**Post-operative fever**

Ten women among AH group had fever while none had fever in VH group, this was statistically significant with p value being 0.001 (p < 0.05 is statistically significant) as determined by chi square test.

**Post-operative hemoglobin & packed cell volume (pcv)**

**Table 4: Post operative Hb and PCV wise distribution of study subjects.**

	TYPE SURGERY	OF	N	Mean	Std. Deviation	Std. Error Mean	t ' Value	P Value
<b>POST OP Hb</b>	Total abdominal Hysterectomy		50	10.736	1.129	0.160	0.793	0.430
	Vaginal Hysterectomy		50	10.924	1.239	0.175		
<b>POST OP PCV</b>	Total abdominal Hysterectomy		50	31.196	4.298	0.608	0.482	0.631
	Vaginal Hysterectomy		50	31.56	3.176	0.449		

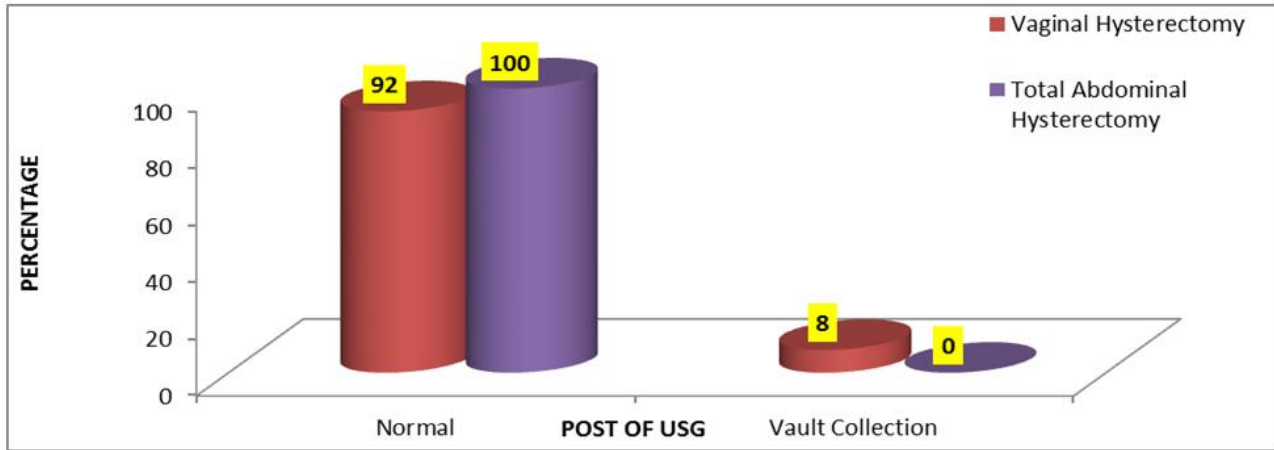
For VH group Mean HB & PCV were 10.924 + 1.239 gm/dl & 31.56 + 3.176 % (mean + 2 sd) respectively. For AH group mean HB & PCV were 10.736 + 1.129 gm/dl & 31.196 + 4.298 % (mean + 2 sd) respectively.

study of 2 groups for post-operative HB& PCV with independent t test revealed no significant difference between groups with p value 0.43 and 0.63 respectively (p <0.05 is statistically significant) For Vaginal

hysterectomy there was statistically significant drop in HB but not PCV after surgery with mean drop of HB by 0.25gm/ dl and PCV by -0.08% from pre-op levels.

For AH group there was statistically significant drop in HB and PCV after surgery with mean drop of HB by 0.494 gm/ dl and PCV by 1.4% from pre-operative levels.

**Post-operative Usq findings**



**Figure 6: Post operative Usq findings wise distribution of study subjects.**

4 women among AH group had vault collections as detected by USG. But no one among VH had any collection. But this difference was not statistically significant as p value by Fischer exact test is -0.11. No one had any hematoma by USG examination.

**IV DISCUSSION**

In our study more number of patients belonged to age group 36-45 years, there was no difference in parity, BMI, pre-operative and post operative Hb & PCV among both groups Uterine size of patients was comparable between both groups.

There was No significant difference in terms of anesthesia pain score was less in VH group in comparison with AH group None of the women had any bowel complaints or complications post- operatively.

For vaginal hysterectomy there was statistically significant drop in HB but not PCV after surgery with mean drop of HB by 0.25gm/ dl and PCV by -0.08% from pre-op levels.

For AH group there was statistically significant drop in HB and PCV after surgery with mean drop of HB by 0.494 gm/ dl and PCV by 1.06% from pre-operative levels.

4 women among AH group had vault collections as detected by USG. But no one among VH had any collection. But this difference was not statistically significant, No one had any hematoma by USG examination.

**Table 5: Comparison of mean age groups inTAH with different authors and present study.**

AUTHORS	Mean age (years)
Pradeep garg <sup>[11]</sup> (2003)	42.2
Isik akbay <sup>[12]</sup> (2004)	45.0
Matteson et al(2006)	46.3
Present study	40.3

Mean age group in the study done by pradeep garg is 42.2 and in the study done by isik akbay it is 45years and in the study by matteson et al it is 46.3 and in the present study mean age is 40.3 yrs.



**Table 6: Comparison of post operative complications in TAH by different authors with present study.**

	Hemorrhage	UTI	Vault hematoma	Fever	Wound infections
Isik akbay <sup>[12]</sup> et al	-	7.4%	-	32.3%	3.7%
Singh abha <sup>[13]</sup>	-	-	-	3%	1%
Tariq miskry	-	5.5%	11.1%	-	5.5%
Present study	1.7%	3.3%	8%	13.3%	6.7%

In the study by isik akbay et al, 7.4% had UTI, 32.3% had fever and 3.7% had wound infections as postoperative complications. In the study by tariq miskry 5.5% had UTI, 11.1% had vault hematoma and 5.5% had wound infections post operatively and in the present study, 1.7% had hemorrhage, 3.3% had UTI, 13.3% had fever and 6.7% had wound infections post operatively.

## V CONCLUSION

Uterine fibroids is most common indication for hysterectomy in our institution. Intra-operative injuries are more common in AH. VH takes less time for surgical procedure; less time to ambulation and less hospital stay after surgery. VH is associated with less pain, less fever, less blood loss, and less postoperative bowel and bladder complications. Thus VH is safer and effective than AH.

## VI REFERENCES

- Bala R, Devi Pratima K, Singh CM. Trend of hysterectomy. A retrospective analysis in RIMS, Imphal. *Int J Gynaecol Obstet India*, 2013; 29(1): 4-7.
- S Akhter, R Nazneen. Clinical Evaluation of Total Abdominal Hysterectomy-A Prospective Study in a Tertiary Care Hospital. *Northern International Medical College Journal*, 2015; 6(2): 76-77.
- Aarts JWM, Nieboer TE, Johnson N, Tavender E, Garry R, Mol BWJ, Kluivers KB. Surgical approach to hysterectomy for benign gynaecological disease. *Cochrane Database of Systematic Reviews*, 2015; 8. Art. No.: CD003677. DOI: 10.1002/14651858.CD003677.pub5.
- Neelgund S, Hiremath P. Analytical study of hysterectomies. *Int J Reprod Contracept Obstet Gynecol*, 2016; 5: 2307-11.
- Dr. Y. Radhika Ganesh. "Merits And Demerits of Different Routes of Hysterectomy For Gynecological Conditions Without Uterine Descent." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 2017; 38-50.
- Australian Institute of Health and Welfare (AIHW). *National Hospital Morbidity Database: Separation statistics by AR-DRG (version 7.0)*, Australia, 2013.
- Rather GR, Gupta Y, Bharadwaj S. Patterns of lesions in hysterectomy specimens; a prospective study. *J K Science*, 2013; 15(2): 63-8.
- Isaoğlu U. The evaluation of diagnosis in specimens of hysterectomy. *Abant Med J*, 2013; 2(2): 941-943.
- Jeffcoate's Principles of Gynaecology 9th international edition Kumar P, Narendra Malhotra, 2019.
- Clarke-Pearson DL, Geller EJ. Complications of hysterectomy. *Obstet Gynecol*, 2013; 121(3): 654-73.
- Pradeep Kumar Garg, D Deka, Neena Malhotra. Non-descent vaginal hysterectomy for Benign Condition. A better proposition than abdominal hysterectomy. *Obst. & Gynaec. Today*. Vol. VII, 2002.
- Isik- Akbay, Ozgur H. Harmanti, Ashwin J Chatwani. Hysterectomy in obese women: A comparison of abdominal and vaginal routes *Obstet Gynecol*, 2004; 104: 710-4.
- Singh Abha, Bansal Shweta. Vaginal hysterectomy for more prolapsed uterus. *Obstet Gynecol md*, 2006; 56(2): 152055.