International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2023; 7(3): 13-16
Received: 20-02-2023
Accepted: 22-03-2023

Dr. Arun Gupta
Professor and HOD, Department of Obstetrics and Gynaecology, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India

Dr. Aditi Sharma
Junior Resident, Department of Obstetrics and Gynaecology, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India

Dr. Bhamini Jakhetiya
Assistant Professor, Department of Obstetrics and Gynaecology, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India

Dr. Divya Chaudhary
Assistant Professor, Department of Obstetrics and Gynaecology, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India

Dr. Shradha Upadhayay
Junior Resident, Department of Obstetrics and Gynaecology, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India

Corresponding Author:
Dr. Arun Gupta
Professor and HOD, Department of Obstetrics and Gynaecology, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India

Endometrial ablation by trichloroacetic acid in abnormal uterine bleeding: A prospective interventional study

Dr. Arun Gupta, Dr. Aditi Sharma, Dr. Bhamini Jakhetiya, Dr. Divya Chaudhary and Dr. Shradha Upadhayay

DOI: https://doi.org/10.33545/gynae.2023.v7.i3a.1333

Abstract
To evaluate the effectiveness of 50% Tricolored acetic acid (TCA) instillation in uterine cavity for the treatment of Abnormal uterine bleeding (AUB). In this study, 40 patients with the complaints of Abnormal menstrual bleeding, without any organic cause after ruling out malignancy were taken into consideration. After individually calculating the volume of TCA, it was instilled into the uterine cavity for chemically ablation of the endometrium. After a follow-up of 3 months, out of 40 patients, 53% reported hypo menorrhea and 27% reported amenorrhoea in contrast to 20% patients who had persistent symptoms. The study suggested that endometrial ablation with TCA is simple, cost effective , does not require longer hospital stay ,can be done as an OPD procedure ,do not require any sophisticated instrumentation and can be easily performed at primary health care centres after proper evaluation. However, to be used on regular basis, this method requires more randomised controlled trials.

Keywords: Abnormal uterine bleeding, tricolored acetic acid, chemical ablation, menorrhagia

Introduction
Menstrual irregularities and abnormal uterine bleeding account for up to 25%-33% of women attending gynaecological outpatient Department. Abnormal uterine bleeding (AUB) is a broad term that describes irregularities in the menstrual cycle involving frequency, regularity, duration, and volume of flow. Up to one-third of women will experience abnormal uterine bleeding in their life, with irregularities most commonly occurring at menarche and per menopause [1].
Women may have serious effects, such as iron deficiency anaemia, hospitalisation, blood transfusions, or intravenous medicines. AUB can be a significant financial burden and have a negative impact on one's quality of life both medically, socially and economically.
Several therapeutic modalities have been developed over the years, both medical and surgical. Medical modalities include NSAIDs, anti-fibrinolysis drugs, hormonal therapy like OCPs, progesterone's, danazol, GnRH agonists, progesterone-releasing IUCDs etc. Further surgical options are divided into both conservative and radical (hysterectomy). Conservative surgical methods include dilation and curettage, myomectomy, polypectomy, endometrial ablation, uterine artery embolization, MRI-Guided Focused Ultrasound Surgery etc. [2, 3]. Alternative methods are hysteroscopy resection or/and ablation of endometrial cavity by Nd-YAG layer, roller ball or thermal. However, these procedures have a high likelihood of recurrence, need special training, and have dangerous side effects such fluid overload, uterine perforation, infection, bleeding, thermal damage, and even death [4, 5, 6, and 7].
These factors have led to ongoing research into alternative techniques for endometrial ablation. We presented chemical endometrial ablation without the need for specialised training to help mitigate many of these drawbacks and dangers [8]. TCA is one of our go-to treatments since the acid is given topically, not absorbed systemically, and induces chemical cauterization and protein denaturation. It doesn't affect the entire body and is initially used to treat vaginal papillomas [9–11]. Consequently, the main goal of this study was to evaluate the effectiveness of intrauterine instillation of TCA for endometrial ablation in AUB patients.

Material and methods
The study was conducted after approval from Institutional Research Review Committee and

Institutional Ethical Committee from February 2021 to July 2022.

After applying the inclusion and exclusion criteria patients with abnormal uterine bleeding visiting the Gynaecology OPD at GMCH, Udaipur were included in the study population.

Inclusion criteria

1. Patient who presented with abnormal uterine bleeding not responding to medical therapy wanted conservative management and also didn't desire fertility in future.
2. Sonographer findings showing Endometrial Thickness <10mm
3. Transvaginal Scan finding of uterine length < 10 cm.
4. Patients who had undergone endometrial aspiration and malignant and pre-malignant lesions had been ruled out.

Informed written consent was taken from all patients. Each patient underwent a routine history taking, physical examination and complete haematological evaluation. Other investigations like BT, CT, Pap's smear, endometrial biopsy and USG were also taken into account. All the patients had documented benign endometrial histology without atypia.

Patient placed in dorso-lithotomy position. Bladder was emptied .Under local anaesthesia with 1% lignocaine HCl, cervix was dilated to insert the cannula of 3 mm diameter and 6 cm length and fixed with a clamp. The calculated volume of 50% v/v TCA was instilled from the cannula into the uterine cavity. TCA volume was calculated using the formula: - Volume of TCA (ml) = Length x Width x Thickness x 0.062. Length, width and thickness are approximate estimate of uterus in which the chemical is to be instilled and when no amount of material is released outside the uterus from the tubes.

Vaginal walls were packed with gauge pads to collect any leakage from the cervix and protect the vagina and cervix from any burn.

Results

Out of 40 patients, who were included in the study, according to Table-1 maximum no. of cases were in the age group of 31-40 (47.5%) years and there was no patient of age less than 20 years.

As per Table-2 the most common presenting complaint was menorrhagia (60%) followed by polymenorrhagia (25%).

At the time of presentation, 30 out of 40 patients had PBAC score more than 100. Post TCA ablation at 3 months follow up, 32 patients had PBAC score less than 100, as shown in table 3.

On transvaginal sonographer before TCA ablation, the mean endometrial thickness in our study was 7.44. In 10 patients the endometrial thickness was between the ranges of 4-6mm. whereas, 21 patients (52.5%) had endometrial thickness between ranges 6.1-8mm (Table 4). And 9 patients were having endometrial thickness in the range of 8.1-10mm.

The mean VAS was 5.17 during the procedure and was decreased to mean value of 3.52, evaluated 30 minute post procedure.

Follow-up was done for all the 40 patients after the procedure at1, 2 and 3 month follow-up. At 1 month follow up 10 patients experienced no bleeding whereas 24 patients had mild bleeding and 6 patients had persistent symptoms. At 2 month follow up, total 10 patients showed no bleeding, whereas 22 and 8 patients mild or normal bleeding and persistent symptoms, respectively. 2 patients that initially had mild bleeding, their symptoms persisted at 2 month follow up. At 3 month follow up, total 11 patients achieved amenorrhoea (no bleeding), whereas 21 and 8 patients had hypo menorrhea (mild bleeding) and persistent symptoms, respectively (Table 5).

Table 6- shows decrease in endometrial thickness after TCA ablation by performing a transvaginal sonographer pre TCA ablation and at 3 month follow up post TCA ablation. The mean decrease in endometrial thickness for patients having pre-ablation endometrial thickness between ranges of 4-6mm was found to be 2.7mm whereas, it was found to be 2mm and 1.4mm for the range 6.1-8 and 8.1-10, respectively.

Only 10 patients (25%) out of 40 patients in our study had shown complications. Local irritation was the most common (7 patients). Vaginal burn, swelling and fever was seen in 1 patient each. Patients with vaginal burn and local irritation were treated with local beta dine ointment, and complication was relieved within 6 days. Swelling showed spontaneous resolution within 2 days without any intervention. Patient who showed fever was treated with 5 days of oral antibiotic.

Table 1: Age-wise distribution

Range (age)	Number	Percentage
<20	0	0%
21-30	3	7.5%
31-40	19	47.5%
>40	18	45%
Total	40	100%

Table 2: Presenting complains

Complain	Number	Percentage
Menorrhagia	24	60%
Metrorrhagia	6	15%
Polymenorrhagia	10	25%
Total	40	100%

Table 3: PBAC score pre and post TCA ablation

Pre and post TCA ablation		PBAC score	
		Less than 100	More than 100
Pre TCA ablation		10	30
Post TCA Ablation	1 Month	34	6
	2 Month	32	8
	3 Month	32	8

Table 4: Endometrial thickness on Transvaginal Sonographer (TVS) Pre TCA ablation in post menstrual phase

Endometrial Thickness(mm)	Mean	Numbers	Percentage (%)
4-6	5.1	10	25%
6.1-8	7.6	21	52.5%
8.1-10	9.7	9	22.5%
Total	7.44	40	100%

Table 5: Post procedure follow-up

Status	1month	2month	3month
No bleeding	10 (25%)	10 (25%)	11 (27.5%)
Mild bleeding (PBAC less than 100)	24 (60%)	22 (55%)	21 (52.5%)
Persistent symptoms(PBAC more than 100)	6 (15%)	8(20%)	8(20%)
Total	40	40	40

Table 6: Endometrial thickness range (in mm) reduction post TCA ablation during post-menstrual phase

Endometrial Thickness(mm)			
Pre TCA ablation		At 3 months of TCA ablation	
Range	Mean	Range	Mean
4-6	5.1mm	2-3	2.4mm
6.1-8	7.6mm	3.1-6	5.6mm
8.1-10	9.7mm	8.1-9	8.3mm

Table 6: Endometrial thickness range (in mm) reduction post TCA ablation during post-menstrual phase

Endometrial Thickness(mm)			
Pre TCA ablation		At 3 months of TCA ablation	
Range	Mean	Range	Mean
4-6	5.1mm	2-3	2.4mm
6.1-8	7.6mm	3.1-6	5.6mm
8.1-10	9.7mm	8.1-9	8.3mm

Discussion

Endometrial trichloroacetic acid application is a chemical ablation method used for the treatment of abnormal uterine bleeding. Although several agents like quinacrine, ethanol have been used before, long time success rate is low due to high regeneration capacity of endometrium. Another method, which has been widely applied, is the medical treatment. However, it is usually associated with high recurrence rates, as soon as the treatment is stopped. Moreover, the patients generally represent low compliance.

The mean age of our patients was 38.32 years and almost 92.5% (37 patients) of our study population were more than 30 years of age. Kucuk and Okman [12] have found the rate of amenorrhea of 28.9%, 28.9% and 26.7% at the end of 3, 6 and 9 months. The present study showed that TCA intrauterine instillation is associated with results comparable to those obtained by Kucuk and Okman. The amenorrhea rate at 3 month follow-up was 27.5% in this study which is lower compared to study done by Kucuk and Okman. The rate of hypo menorrhea at 3 month follow-up was 52.5% in this study, which is higher in comparison to 37.8% which was found by Kucuk and Okman. 20% of the patients had persistent symptoms this could be because the present study focused on short-term efficacy of TCA and alternative treatment options were given when symptoms persisted. Endometrial TCA application requires no special training or hospitalization or general anaesthesia and can be easily repeated without any serious complication. Patients were able to return to their daily activities soon after the process.

In present study, TCA endometrial ablation performed as an outpatient procedure and patients were allowed to go home after 2 hours post procedure. During the instillation, we did not encounter any major discomfort in any of patient. Patients did complain of mild pain as it was due to instillation of TCA.

Result of the present study is comparable with the study done by Musthafa kucuk *et al*. who have found the same result at 1 year follow up. Hence, the endometrial thickness at the end of 3 months may predict the outcome of the 1st year.

We found that TCA ablation causes reduction in endometrial thickness, which is directly related to pre-TCA ablation endometrial thickness the mean reduction in endometrial thickness decreases as the pre-ablation endometrial thickness increases.

Conclusion

Trichloroacetic acid endometrial ablation is not an alternative to surgical or medical treatment for the patients with abnormal uterine bleeding. But it is better than other ablative procedures and it can be used as a good palliative treatment in patients without any structural abnormality on transvaginal ultrasound, with medical co-morbidities not suitable for medical therapy or surgery. It is simple, cost effective, does not require longer hospital stay ,can be done as an OPD procedure ,do not require any sophisticated instrumentation and can be easily performed at primary health care centres after proper evaluation.

References

1. Munro MG, Critchley HOD, Fraser IS. FIGO Menstrual Disorders Committee. The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. Int. J Gynaecology Obstet. 2018;143(3):393-408.
2. Kazemijaliseh H, Ramezani Tehrani F, Behboudi-Gandevani S, *et al*. A population-based study of the prevalence of abnormal uterine bleeding and its related factors among Iranian reproductive-age women: an updated

data. Arch Iran Med. 2017;20(9):558-563.
3. Senthilvel S, Vasudevan S, Anju PS, *et al*. Assessment of symptoms and quality of life among postmenopausal women in a tertiary care hospital in Kochi, South India: A hospital-based descriptive study. J Midlife Health. 2018;9(4):185-190.
4. Munro MG, Lukes AS. Abnormal uterine bleeding and underlying haemostatics disorders: report of a consensus process. *Fertil Steril*. 2018;84(5):1335-1337.
5. Gray SH, Emans SJ. Abnormal vaginal bleeding in adolescents. Paediatric Rev 2017;28(5):175-182.
6. Sun Y, Wang Y, Mao L, *et al*. Prevalence of abnormal uterine bleeding according to new International Federation of Gynecology and Obstetrics classification in Chinese women of reproductive age: A cross-sectional study. Medicine. 2018;97(31):e11457.
7. Davis, Emily, and Paul B. Sparzak. Abnormal uterine bleeding; c2018.
8. Long WN. Abnormal Vaginal Bleeding. In: Walker HK, Hall WD, Hurst JW, editors. Clinical Methods: The History, Physical, and Laboratory Examinations. 3rd edition. Boston: Butterworth's. 1990, 173.
9. Whitaker L, Critchley HO. Abnormal uterine bleeding. Best Pract Res Clinical Obstetric Gynaecology. 2016;34:54-65. doi:10.1016/j.bpobgyn.2015.11.012
10. Bradley LD, Gueye NA. The medical management of abnormal uterine bleeding in reproductive-aged women. Am J Obstet Gynecol. 2016;214(1):31-44. doi:10.1016/j.ajog.2015.07.044
10. Telner DE, Jakubovicz D. Approach to diagnosis and management of abnormal uterine bleeding. *Can Fam Physician*. 2007;53(1):58-64.
11. Fraser, Ian S, *et al*. The FIGO recommendations on terminologies and definitions for normal and abnormal uterine bleeding. Seminars in reproductive medicine. 2011; 29(05). © Thieme Medical Publishers.

How to Cite This Article
G Arun, S Aditi, J Bhamini, C Divya, U Shradha. Endometrial ablation by trichloroacetic acid in abnormal uterine bleeding: A prospective interventional study. International Journal of Clinical Obstetrics and Gynaecology**.** Yy;vol(issue):pp. DOI: https://doi.org/