

Impact of tranexamic acid on quality of life in women with heavy menstrual bleeding

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Background

Heavy menstrual bleeding (HMB) is defined as excessive menstrual blood loss which interferes with a woman's physical, social, emotional and/or material quality of life. It can occur alone or in combination with other symptoms. HMB is associated with significant morbidity and any treatment offered should improve the quality of life rather than focusing on menstrual blood loss. In the early 1990s, it was estimated that at least 60% of women had hysterectomy for heavy menstrual bleeding.

Material and methods: This open uncontrolled non randomized trial included 200 women aged between 27 and 45 years with an objective diagnosis of heavy menstrual bleeding having no recognizable anatomical pathology were treated with 3.5 – 4 g of tranexamic acid for a period of three months from May 2015-July 2015 attending OPD in Gynae Unit 2 in Abbasi Shaheed Hospital, Karachi. The quality of life and subjectively experienced state of health were assessed with the aid of a questionnaire at baseline and after the first and third month of treatment main outcome measures were quality of life of women with HMB and improvement of mean MIQ SCORE after treatment.

Result: Tranexamic acid oral treatment showed improvement in Mean MIQ scores compared to baseline. Impairment of social activities and household work was greatly reduced by the treatment. Improvement was noted on amount of blood loss which was decreased Adverse effects were few and not serious like mild headaches and abdominal discomfort

Conclusion: Assessment of quality of life using a validated questionnaire can become an integral part of clinical trials for cost effective analysis on both current and future trials and protocols.

Keywords: menorrhagia impact questionnaire (MIQ), Heavy menstrual bleeding (HMB), quality of life (QOL), patient reported outcome, tranexamic acid.

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Introduction:

Women with HMB suffer diminished quality of life. Although hysterectomy is considered the definitive treatment, non surgical options reduce the burden of unnecessary procedures. Menstrual problems can occur anywhere between 12-50yrs of age¹⁻³, but heavy menstrual bleeding is more common between 30-45 yrs of age⁴⁻⁵, when women have many roles and responsibilities which would be severely affected by her complaints. Although hysterectomy can solve the problem of heavy menstrual bleeding, most women would rather avoid taking

this irreversible step⁶. Hence heavy menstrual bleeding should be defined as excessive blood loss which interferes with the woman social, emotional, physical and material quality of life^{7,8}. Heavy menstrual bleeding is also associated with anemia which also adds to the poor quality of life²². The volume of blood loss at menstruation is controlled by local uterine vascular tone, haemostasis and regeneration of endometrium. A relationship exists between total prostaglandin(PGE1, PGI2, and PGF2a) concentration¹¹ and average blood loss. Patients with heavy menstrual bleeding have shown a

greater endometrial concentration of the vascular prostaglandin (PGE)⁴. Tranexemic acid is an antifibrinolytic drug whose effectiveness has been proved^{11,18,20}. It is non hormonal, easy to use when needed and exerts its effect fast. The World Health Organisation (WHO) in 1948 defined health as a state of complete physical, mental and social wellbeing and not just the absence of disease. Success of health care may be different in relation from a patient point of view to that of a physician. The challenge for a physician is to target patients need and to improve the quality of life burdened by the disease. Patient satisfaction and experience in now taking an important spotlight in health delivery system and is used as an indicator for measuring quality in health care³. Satisfaction means adequate state of health and the person has no room for complaints i.e. her expectations are met, and ultimately this translates into better care and happier patients. Scanty attention has been paid to issues related to quality of life in our women. A research was needed to access quality of life. As heavy menstrual bleeding is one of the most frequently encountered symptoms in clinical practice, causing not only anaemia²² but also considerable distress and reduction in quality of life. Medical therapy is considered the first option in patients with heavy menstrual bleeding and tranexemic acid having few side effects was considered as a drug of choice for evaluating improvement in their quality of life. The main route of excretion is via the kidneys so should be given with caution in patients with renal disease.

Methods:

The study was conducted from Jan 2015-July 2015 on women attending the gynecological clinic at unit II Abbasi Shaheed Hospital affiliated with Karachi Medical & Dental College. 200 women, belonging to the poor income strata who were not pregnant or had menopause / and no history of systemic diseases such as platelets disorder or coagulopathy. Oral contraceptives users either for contraception or treatment were excluded from the study. 200 was the sample size required for the study to have 80% power to detect an absolute difference in improvement in

quality of life.

Each patient was to receive 1000mg of tranexamic acid 6 hourly for 5 days starting from the first day covering 3 menstrual cycles. Adult women up to the age of 49 years were enrolled. Only those patients were included who were giving history of 3 or more days of heavy bleeding since last 4-6 months. All patients had a pelvic examination to rule out any significant pathology. Patient with fibroids were not excluded except for those which were very large and required surgery. Non steroidal anti inflammatory drugs were not allowed during the treatment. Oral iron therapy and vitamins were prescribed throughout the study. Data was collected through a personal interview using Menorrhagia Impact Questionnaire (MIQ) was translated into urdu with changes catering to our social needs. All participants were informed about our aims in the study and their verbal consent was obtained. The ethical review committee of KMDC gave its approval. The MIQ is a disease specific patient reported outcome measurement instrument for heavy menstrual bleeding. The MIQ was designed to measure the effects of heavy menstrual bleeding (HMB) on women self assessment of menstrual blood loss, limitation of her social physical activities and her ability to do work. At the end of three months patients had to answer the MIQ no=4 in which Mean Improvement in MIQ score on quality of life and changes in amount of blood flow were assessed. Analysis was by intention to treat. SPSS version for Windows 8 was used for data entry and statistical analysis.

Results:

Pictorial blood loss chart Table(1) was used to assess the amount of blood loss in previous cycles for a period of 7 days. The PABC score of 130 women out of 200 (65%) scored more than 105, while 70 women (35%) had a score of about 80. Post treatment 130 women who scored 130 had a definite reduction in their blood loss to almost 70, while 40 women (20%) had a reduction to almost 60. Another 20 women (10%) had a reduction to 50, while 10 were not sure. Table(2) is the Menorrhagia Impact

Questionnaire no1, showing pre treatment score of social activities, where 60 patient 30% score 5 i.e. heavy menstrual bleeding was adversely affecting their social activities while 80 i.e. 40(%) patients scored 4. In Table(3) indicating either job or work outside, the same patients scored 5, these scores indicate that those women whose social life was adversely affected were also unable to go outside home to do work, while in the MIQ 3 score for household work Table(4) 100 patients ie 50%scored 5. In the post treatment score assessment MIQ 5 Table (5) 70 i.e. 35% patients a great deal better score of 6, 50 i.e. 25% patients felt a good deal better scoring 5 while 60 i.e. 30% patients scored 4 an average deal better. On the whole when patients were asked to score on their satisfaction 90% of the patients were satisfied and didn't have to go through hysterectomy while 20 patients were neither satisfied nor dissatisfied.

Discussion:

Guidelines and expert opinion recommend that clinical management be guided by subjective patient centered measures The purpose of this study was to target patients genuine needs so that the patient can identify the changes brought about by treatment in the form of improvement in her quality of life According to the NICE guidelines any intervention on part of the clinician should aim to improve the quality of life¹. An initial interview conducted on our women prior to treatment using the MIQ score chart showed poor quality of life the Mean score was 4 and 5 Heavy Menstrual Bleeding was adversely affecting their ability to do household work, unable to visit relatives as they were apprehensive of soiling their clothes. There can be other contributing factors like anaemia from which most of our women suffer.²² Similar studies done in the west on impact on quality of life showed an increase in their expenses because of use of large number of sanitary napkins, socio-sexual life being effected.^{2,3,7,12,17,21} It is the negative effect on quality of life that limits their daily household work, taking care of their children and unable to interact socially which in our social environment is unable to meet relatives and

attend social gatherings. Studies by Lukes et.al and Bushnell have validated the use of MIQ to assess quality of life and its ability to detect treatment induced changes. Another study done in Turkey found that quality of life of women with HMB was markedly affected in terms of their physical, general health, social, and mental health as compared to controls²¹. Women in our study should a similar poor quality of life.

Tranexemic acid though not the drug of first choice for HMB, Pakistan being a poor country can not afford the use of levo norgestrel coated intrauterine. We used the recommended dose of 1000 mg 6 hourly. It was affordable well tolerated and brought about a marked improvement in the Mean MIQ score. Similar studies by Freeman, Lukes, Winkler and Lumsden. MA found use of Tranexemic acid as an effective non contraceptive medical therapy for heavy menstrual bleeding^{9,10,18,20}. Post treatment after three cycles of tranexemic acid use MIQ score showed much improvement as mean MIQ score improvement in health related quality of life is defined as > 1 point increase in the MIQ score. Our results are similar to the other studies^{2,4,12,16}.

Pictorial blood loss assessment score chart was used by us for both initial and post treatment evaluation of improvement. It has been validated as a simple and accurate tool for semi objective assessment of MBL and can be used in clinical settings to aid the decision about treatment satisfaction and followup.^{3,19} A limitation of our study was, some of the women could not make the correct assessment of a change in their blood flow because of the colored cloth they were using as sanitary napkins. However it was the overall feeling of wellbeing which was more important than the actual measure of the blood loss. Similar study shows a reduction in blood flow²⁰. As far as patient satisfaction, 90% of our patient were very much satisfied and wanted to use the same medication in case if they have another episode. Other related studies done to assess patient satisfaction using Menorrhagia impact question. Lukes et al (n = 187). MBL decreased significantly in the tranexamic acid group compared with placebo (P, 0.001)¹⁵,

review of literature showed a similar result like ours where use of tranexamic acid improved the quality of life during the luteal phase of the menstrual cycle over two cycles. In a large open label uncontrolled study including 849 patients investigating the effect of tranexamic acid over three months on QOL. with a five-point scale, (84%) used tranexamic acid. After the third cycle, 81% were satisfied or very satisfied with the treatment, and 94% found their MBL to be decreased or strongly decreased. (P, 0.0001), and increased the proportion of women feeling fit and active by 63% and those feeling no or little impairment in social activities during menstruation by 58% (P, 0.0001)^{17,18}. In our study 90% of the patients were much satisfied with their treatment and felt a great deal better.

Conclusion:

This study results indicate that HMB has a significant negative impact on quality of life. Heavy Menstrual Bleeding should be subjectively assessed using a patient reported outcome instrument. MIQ is a simple questionere easily translated in the native language should be used in our clinical settings. Tranexemic acid should be used as the first line of treatment in heavy menstrual bleeding

Role and contributions of authors:

Dr Sumbul Sohail, Associate Prof. Karachi Medical & Dental College, carried out the study, collected data wrote discussion and conclusion

Shaista Rashid, Assistant Professor, KM&DC, collected the references and helped in writing disscussion

Syed Tariq Ali Adnan, Assistant Professor, KM&DC, collection of reference and data interpretation.

Conflict of Interest: None

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