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RELATIONSHIP OF THE USE OF VAGINAL TO SUBLINGUAL MISOPROSTOL IN MISSED ABORTIONS

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Abstract:

Objective: *The relationship of the vaginal misoprostol pessary to the sublingual misoprostol in the end of the first trimester missed miscarriage is the aim of the assessment.*

Material and Method: *This study was conducted at Sir Ganga Ram Hospital, Lahore from August 2018 to February 2019. The number of patients, who experienced first trimester miscarriage verified via ultrasounds, were sixty.*

Results: *The average age of the patients enrolled for the research was (30.12 ± 4.94) years. However, in sublingual as well as in vaginal category, the average age was 30.20 & (30.03 ± 4.13) years, respectively. Average pregnancy age was 8.87 weeks, along with seven and thirteen weeks as a minimum and maximum week, respectively. Average period of induction of miscarriage to the expulsion was 13.55 hours, with five hours as minimum time and twenty-four hours as the maximum time. Complete miscarriage was viewed in twenty (66.70%) patients, partial abortion in seven patients (23.3%), while failure of expulsion was seen in three patients.*

Conclusion: *The most powerful, efficacious, inexpensive as well as secure procedure for the cessation of the early trimester missed abortion, up till ninth week of gravidity, was sublingual as well as the vaginal misoprostol regiment having seventy percent of success rate. The drawbacks were relatively additional in case of sublingual route, however, the drawbacks were tolerable, as well as comfortably controllable.*

Keywords: *Dilation & Curettage (D & C), Sublingual & Vaginal, Trimester Abortion.*

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INTRODUCTION:

Miscarriage is a comparatively usual event, occurring in up to fifty percent of the known generation [1]. Prior to the 20th week of pregnancy, embryonic demise in utero or that of fetus while retaining product of conception is fairly common. Embryonic death, fertilization with a blighted ovum and fetal deaths are also different types of miscarriage [2]. The most common therapy for miscarriage from the former fifty years was surgical evacuation via D & C. D and C methodology is assumed as secure; however, entanglements, like bleeding, infection, fertility reduction and uterine perforations appear in approximately ten percent of females [3]. Current research has investigated the requirement for routine dilation and curettage, and has revealed instruction or tips that expectant or medical administration might be considered greatly suitable [4]. Termination of gestation via medication or drugs is called medical abortion [5]. Mifepristone, methotrexate and misoprostol are medicines utilized for medical abortion. The most generally utilized medicines for medical abortions are, Mifepristone and misoprostol [6]. In developing states, due to its inexpensiveness, comfortable accessibility and stabilization at a temperature of the room, misoprostol is the prostaglandin of choice [7]. Because of the high cost of Mifepristone, it is only available in a few states [8]. Misoprostol is an unnatural prostaglandin analogue which was primarily utilized for gastric ulcer treatment [9]. With a success rate of eighty-eight to ninety-four percent, vaginal misoprostol is a secure, efficacious as well as acceptable procedure for the cessation of miscarriage [10, 11]. However, sublingual misoprostol is easy to take, prevents the hurtful vaginal management and provides additional secrecy to the procedure of abortion [12]. Lower abdominal pain, fever, chills, fatigue, along with diarrhoea are the common drawbacks of misoprostol and could be controlled through drugs [13, 14].

METHOD AND MATERIAL:

This study was conducted at Sir Ganga Ram Hospital, Lahore from August 2018 to February 2019. The number of patients, who experienced initial trimester miscarriage verified via ultrasound, were sixty. Written approval was taken from the entire research group; those patients having therapeutic, metabolic as well as chronic pathologic conditions, complete miscarriage, hypersensitivity of misoprostol, glaucoma, sickle cell anaemias, as well as breastfeeding mothers were not included in the research.

Analysis of the patients was carried out by the record of regression of serum gravidity indicator (i.e. beta hcg) , small uterine size in association to gestation interval, and on radiologic evidence of absent cardiac activity. In cases who were examined at 5th week or less, Transvaginal ultrasonography was carried out to examine the cardiac activities and to visualize gestational sac. Entire group of those patients having no cardiac activity were recalled after one-week duration for cardiac activity verification.

Pre-formulated Performa consisting of research variables as well as patient's information was utilized for the collection of data. Two categories were formulated, casually. The first category was of the vaginal pessary and the 2nd was sublingual. Every patient in the vaginal category was given misoprostol 800 ug/ vaginal along with hydroxyethyl gel 2.5 ml and squirted into backside of vaginal fornix and consistently evaluated.
If not achieved in the first attempt, 400 µg misoprostol was again given with at least six hours' time period between two doses at maximum.

Every patient in the sublingual category was given 600 ug misoprostol sublingually. The patient was instructed to retain saliva in mouth until the tablet was absorbed completely. In partial miscarriage or in abortion failure, 400 ug of misoprostol was given again at an interval of six hours between two doses maximum.

The findings of medical abortion was recorded in the two categories. The researchher also recorded the quantity of misoprostol doses needed as well as repetition of adverse effect in every case.

For categorical variants, clinical features were summed up in percentage as well as frequency term. Average and standard deviation was utilized for numerical variants. SPSS software was used for statistical assessment.

RESULTS:

The number of cases given misoprostol in each vaginal as well as a sublingual category was thirty. The average age of the enrolled patients for research was (30.12 ± 4.94) years. However, in sublingual as well as in vaginal category, the average age was 30.20 & (30.03 ± 4.13) years respectively. The number of primigravid and multi gravid women in vaginal misoprostol category were 6 & 24, respectively. Among the research group, the number of females having blighted ovum were 4. Average pregnancy age was 8.87 weeks along with seven and thirteen weeks

as a minimum and maximum week, respectively. Average induction to miscarriage period was 13.55 hours with five hours as minimum time and twenty-four hours as the maximum time. Total miscarriage was viewed in twenty (66.70%) patients, partial abortion in seven (23.3%), and miscarriage failure in three patients.

Sublingual misoprostol category comprises of 6 primigravid as well as 24 multi gravid females among which the numbers of females having blighted ovum was "3", with seven and twenty weeks as a minimum and maximum gravidity duration. Average pregnancy was 9.3 weeks. The number of patients checked up with complete miscarriage were twenty-two (73.3%). The number of partial, as well as complete abortion cases, were six (20%) and two (6.7%) respectively. Average time of induction to the complete abortion time period was 13.10 hours with minimum and the maximum time of four and twenty-six hours, respectively.

The number of complete aborted patients with vaginal misoprostol single dose were five (16.7%). The number of patients who were given repeat dosage twice and thrice were fourteen (46.7%) and eleven (36.6), respectively. One sublingual misoprostol dose entirely aborted eight (26.7%) cases, whereas eleven (36.7%) patients needed double dose and the number of patients who required three doses were also eleven (36.7%).

Intense abdominal pain as an adverse effect of the sublingual category was recorded in four (13.3%) patients. The number of patients who underwent headaches were six (20%) along with seven (23.3%) nausea, vomiting, as well as, diarrhoea cases. 150 ml to 200 ml is the mean blood loss with nil blood transfusion.

The side effect of the doses in the vaginal category were intense abdominal pain which appeared in two (6.6%) patients, only. Whereas, the number of patients suffering from headache were three (6.6%), moreover, nausea ,vomiting, as well as diarrhea, was noticed in two (6.6) patients. Just a single patient lost an additional 500ml of blood and had fever, chills and nausea on single misoprostol dose. Prompt resuscitation was carried out effectively and expulsion was conducted sublingually in an emergency.

Nil statistical dissimilarities among absorption results P=830, duration of induction, absorption and misoprostol dosage (P=0.591) between sublingual and vaginal categories were noticed. However, substantial dissimilarities regarding misoprostol adverse effect were recorded in both the categories. In sublingual category, the side effects of GIT were higher. The rate of absorption were not influenced with patient age in the sublingual and vaginal category; however, the issue was missed abortion gravidity age. Abortion findings were noticed in up to ninety –five percent in missed abortion of nine weeks usually.

Table – I: Vaginal and Sublingual Route

Route		**Vaginal**	**Sublingual**
Complete Abortion (42)	Number	20	22
	Percentage	66.7	73.3
Incomplete Abortion (13)	Number	7	6
	Percentage	23.3	20
Failure to Abort (5)	Number	3	2
	Percentage	10	6.7
P-Value		0.83	

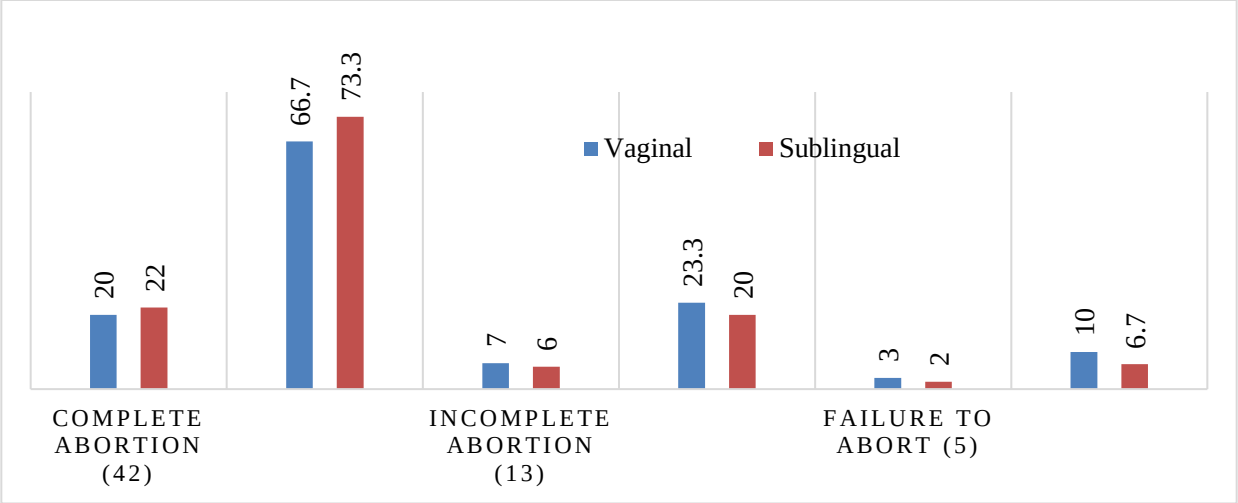


Table – II: Stratification of Route

Route		Vaginal	Sublingual
One (13)	Number	5	8
	Percentage	16.7	26.7
Two (25)	Number	14	11
	Percentage	46.7	36.7
Three (22)	Number	11	11
	Percentage	36.6	36.7
P-Value		0.591	

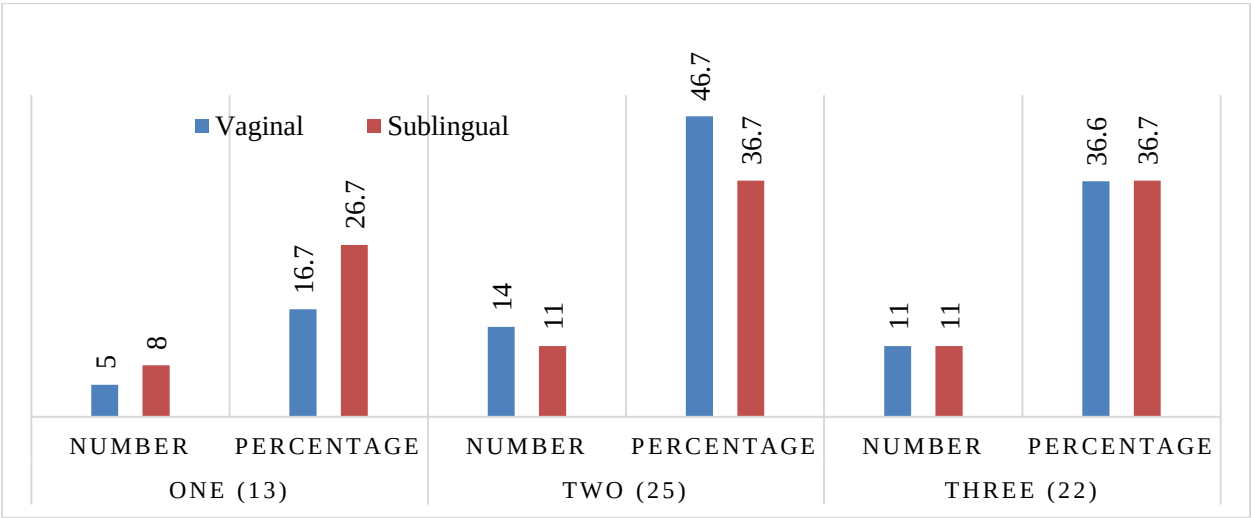
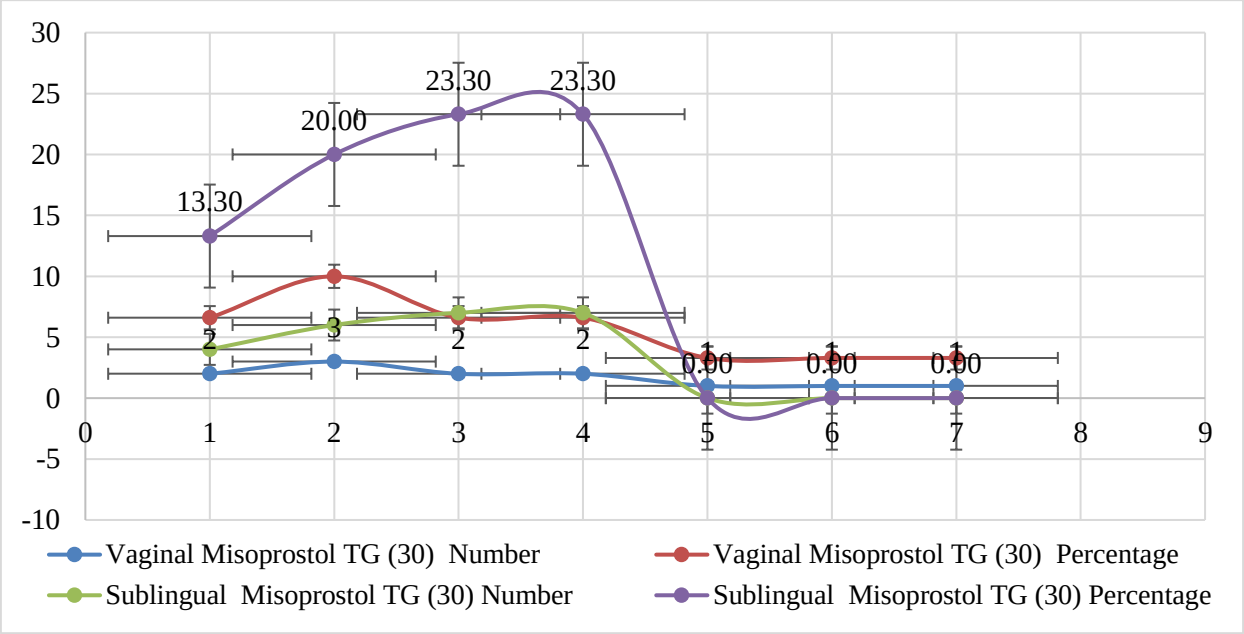


Table – III: Stratification of Various Features

Features	Vaginal Misoprostol TG (30)		Sublingual Misoprostol TG (30)	
	Number	Percentage	Number	Percentage
Abdominal Pain	2	6.60	4	13.30
Headache	3	10.00	6	20.00
Vomiting	2	6.60	7	23.30
Diarrhea	2	6.60	7	23.30
Fever	1	3.30	0	0.00
Chills	1	3.30	0	0.00
Hemorrhage (> 500 ml)	1	3.30	0	0.00



DISCUSSION:

The prostaglandins addition in the treatment of cessation of initial trimester fetal deaths has altered the traditional way of uterus surgical expulsion. This procedure for such complication is established on misoprostol uterotopic characteristics. It is an inexpensive, secure and recognized the procedure of inducing abortion with seventy percent effectiveness in our research. Misoprostol is mostly in oral usage but could be utilized largely by the sublingual, vaginal and rectal path as well.

The current research presented "66.6%" of misoprostol effectiveness in the vaginal category as well as (73.3%) in the sublingual category. However, nil statistical dissimilarity were identified between the two ways (P<0.5). Inclusion to the absorption time period was uniform but adverse effects of the GIT are higher in the sublingual path of misoprostol for abortion till nine weeks. In failure or partial abortion cases, surgical expulsion was much easier because of cervix softness as well as dilation by misoprostol treatment in both the categories. In one of the researches conducted in Denmark by Gronlund et al, seventy-one percent are the results of medical cessation of initial trimester missed abortion. The ratio of the complete abortion was ninety-six percent till ninth week pregnancy; these results are uniform to our research. One more research conducted in 2002 by tang OS et al on 50 female of first trimester missed abortion with eighty-six percent of complete absorption rate along with (4.1 ± 1.1) of average needed dose. These findings were relatively greater, with respect to our research, however they utilize misoprostol of 600mg which was repeated at a time duration of three hours up to the limit of five doses.

In another trial conducted by Nagi SW on eighty patients, Nagi SW found the effectiveness of vaginal misoprostol as eighty-five percent till ninth week of gravidity, and it is lesser with respect to our research [18]. The additional better results might be the reason, that in our research several misoprostol doses were utilized at the time period of six hours with respect to Nagi research in which several doses were conducted at day 1st, 3rd, and 5th. The number of doses provided with the time period of one day were not possible in our research due to the unwillingness of the patients to stay for one day to free herself from dead fetus via medical activity. Similarly, if we were to permit them to go home, they couldnt have handled emergency situations, like excessive bleeding, because majority of them were either not educated enough or lived far away from hospital or caring centre.

The eight percent of the complete abortion rate was viewed in a research conducted by Wood SC and Brain PH with misoprostol single dose. The factor behind such higher result was given appropriate time and assessment was performed after two days and followed the patients up till seven days for complete abortion.

The misoprostol effectiveness was eighty-eight percent in a research conducted by John et al researcher given three doses maximum with a single-dose time interval of twenty-four hours, which is the main reason for better result [19]. The misoprostol adverse effects such as chills, headache, nausea, fever, vomiting as well as diarrhoea were at their lowest in vaginal treatment for missed abortion in a research conducted by Wakabayashi et al which is consistent with our research [20].

Comparative research conducted by Tang OS and Lau WN et al between sublingual as well as the vaginal route of misoprostol on eighty initial trimesters missed abortion females. Misoprostol 600 µg was given to all females; the success rate of medical treatment was 95% & 87.5%, respectively. The researcher also recorded increased adverse effect with sublingual routes [21].

The numbers of patients influenced with adverse effects of misoprostol were two-hundred and thirty-four, in accordance with the research performed by Blanchard K et al., in which, headache was noticed in eight percent, nausea, vomiting, as well as diarrhea in fifteen percent, fever and chills in three percent. In sublingual research category, with respect to vaginal misoprostol, there were limited gastrointestinal adverse effects were noticed [22]. The above mentioned two types of researches are narrowly linked with our research. Our research also highlighted increased adverse effect in the sublingual category with respect to the vaginal category.

Findings appear to verify that the most secure, efficacious option for initial trimester gestation cessation is medical abortion. Moreover, sublingual as well as vaginal routes are potent, however sublingual routs comprise of higher adverse effects. The research concluded, that multiple numbers of researches on the same topic should be conducted to determine the optimal schedule as well as misoprostol dose to be utilized among divergent routes.

CONCLUSION:

The most powerful, efficacious, inexpensive as well as secure procedure for the cessation of initial quarter missed abortion till the ninth week of gravidity was sublingual as well as vaginal misoprostol regimen, having seventy percent of success rate. The drawbacks were relatively additional in case of sublingual route, however, these multiple drawbacks were tolerable ,as well as comfortably controllable.

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