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MID TRIMESTER TERMINATION;
PGF2 ALPHA VERSUS MISOPROSTOL

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ABSTRACT… Objective: The objective of study was to compare the efficacy of extra amniotic prostaglandin F_2 alpha and vaginal misoprostol for termination of 2nd trimester pregnancy. **Study design:** It was quasi experimental study. **Place and duration of study:** The study was conducted at Gynae Unit II, DHQ Hospital affiliated with Punjab Medical College, Faisalabad for a period of one year from July 2012 to June 2013. **Material and methods:** This study included 100 patients who presented with congenitally anomalous foetus or IUD during 2nd trimester for termination of pregnancy. Outcome was evaluated by percentage of successful cases for TOP and induction to delivery interval. **Result:** As regards the efficacy of misoprostol, success rate for termination of pregnancy was 86% and mean induction to delivery interval was 13.16±1.987 hours. Regarding PGF_2 alpha success rate for TOP was 88% and mean induction to delivery interval was 16.07±3.202 hours. **Conclusions:** Misoprostol is comparable in its efficacy to PGF_2 alpha for mid trimester termination and can be used as a cheaper alternative.

Key words: Misoprostol, Mid trimester termination, Prostaglandin F_2 alpha.

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INTRODUCTION

Unsafe termination of pregnancy is still a major cause of maternal morbidity[1]. Termination of pregnancy is defined as medical or surgical removal of pregnancy before the age of viability[2]. Medical abortion may have advantage in obese women where the cervix can be difficult to visualize, where fibroids may obstruct access to uterine cavity and for some uterine anomalies[3]. Misoprostol has been used with increasing popularity for induction, as it has been shown to be the most effective agent for second trimester induction[4].

The most common accepted indications for termination of pregnancy are following;

- A pregnancy that would result in the birth of a child with anomalies incompatible with life or associated with significant physical or mental morbidity.
- Fetal death
- To save the life of the mother or preserve the health of the mother[5].

There have always been continued and convincing efforts to improve technology for termination of pregnancy in terms of effectiveness, acceptability and reduction of side effects and complications[6].

Prostaglandin F_2 alpha has been used extensively for cervical ripening and induction of termination in 2nd trimester of pregnancy[13]. Misoprostol is a prostaglandin E_1 ester that stimulates uterine contractions in the pregnant uterus by binding to EP_2/EP_3 prostaglandin receptors[7]. It has been used for this purpose because of its effectiveness, low cost and stability at room temperature[8]. Because of its cervical ripening and uterotonic property, misoprostol has become one of the most useful drugs in obstetrics and gynaecology[9].

The aim of this study was to determine whether misoprostol administered vaginally is as effective as prostaglandin F_2 alpha for termination of 2^{nd} trimester pregnancy, thereby finding an appropriate and cheap method for second trimester termination.

MATERIAL AND METHODS

This was a quasi experimental study conducted at DHQ Hospital affiliated with Punjab Medical College, Faisalabad, over a duration of one

year and included 100 cases of mid trimester termination who presented with IUD or congenitally anomalous foetus.

Patients who presented with inevitable or incomplete miscarriage and in whom mid-trimester termination was planned due to maternal ill health were excluded from study.

All patients were evaluated regarding their history of current pregnancy as well as past obstetric history and medical and surgical history. Then detailed examination including general physical, systemic and obstetric examination was carried out. Routine laboratory investigation which were carried out included blood group, CBC, RBS, Urine C/E and HBs Ag, Anti HCV antibodies. Specific investigations included ultrasonography for intrauterine fetal demise or fetal anomaly. Also any other specific investigations required like platelet count and serum fibrinogen in case of intrauterine fetal demise were carried out.

All selected cases were counseled and after getting informed consent were allocated in 2 groups of fifty each!

- Group A was given misoprostol administered vaginally in a dose of 400μg initially followed by 200μg every 3 hours to a maximum of 6 doses.
- Group B was given prostaglandin F_2 alpha (0.25mg/ml) diluted solution given through intra-cervical catheter, at a rate of 1ml/hour till the balloon is expelled or a maximum of 24 hours.

Following parameters were noted in each group of cases.

1. No. of cases where termination of pregnancy was successful.
2. Induction to delivery interval.

RESULTS

During this study various factors like booking status, age, gestational age, previous obstetric history including history of caesarean section and the effect of given drug were noted and following results were obtained.

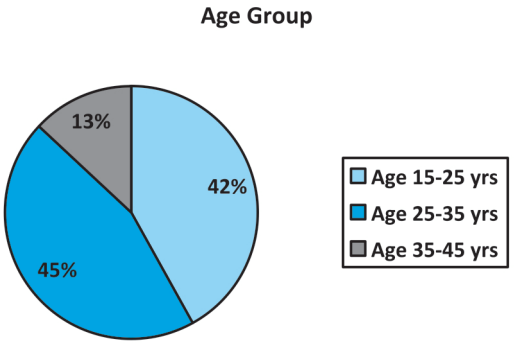
BOOKING STATUS

Out of hundred women admitted for mid-trimester termination, only 21 were booked and 79 were un-booked.

AGE

Most of the women were in the age group of 25-35 years.

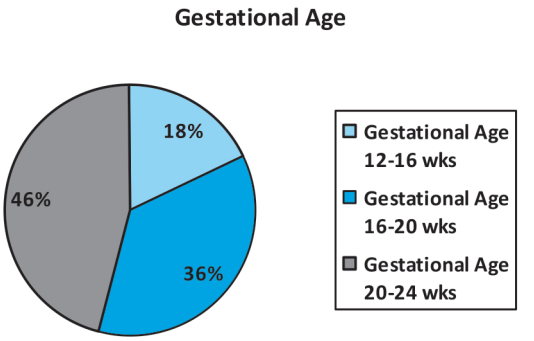
Age group of 15-25 years	42
Age group of 25-35 years	45
Age group of 35-45 years	13



GESTATIONAL AGE

Most of the patients were in gestational age of 20-24 weeks.

Gestational age of 12-16 weeks	18
Gestational age of 16-20 weeks	36
Gestational age of 20-24 weeks	46



PREVIOUS CAESAREAN SECTION

Out of 100 cases 23 has previous caesarean section done.

No. of Previous Surgeries	No. of Cases	%age
None	77	77%
Previous-1 Section	16	16%
Previous-2 Section	6	6%
Previous-3 Section	1	1%

Table. I

EFFICACY OF MISOPOSTOL

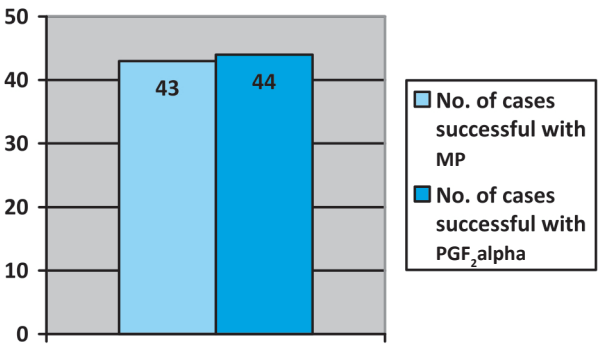
Following results were obtained regarding efficacy of misoprostol;

- Out of 50 cases, 43 had successful induction of termination thus giving success rate of 86%.
- Mean time required for termination of pregnancy using misoprostol was 13.16±1.987 hours.

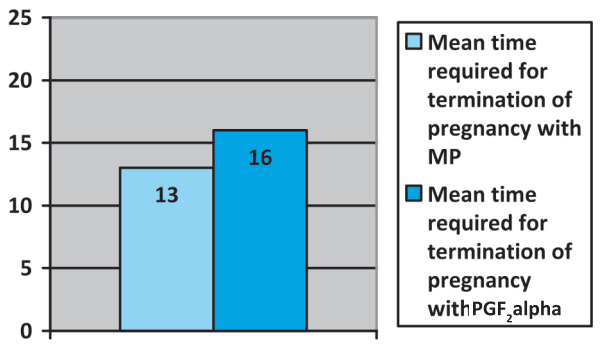
EFFICACY OF PROSTAGLANDIN F_2 ALPHA

Following results were obtained regarding efficacy of $PGF_2\alpha$;

- Out of 50 cases, 44 had successful termination of pregnancy, thus giving a success rate of 88%.
- Mean time required for termination of pregnancy using PGF_2 alpha was 16.07±3.202 hours.



No. of successful cases of mid trimester termination misoprostol Vs $PGF_2\alpha$



Mean time required for mid trimester termination misoprostol Vs $PGF_2\alpha$

DISCUSSION

In this study, success rate of misoprostol for mid-trimester termination was 86% while success rate of prostaglandin F_2 alpha for termination of pregnancy was noted to be 88%. Chi-square test was used as the test of significance with P-value of 0.766 showing that difference is statistically insignificant. The success rate of misoprostol in this study is comparable with result of study conducted at Jinnah Postgraduate Medical Centre Karachi which showed a success rate of 27.7% within 12 hours, 83.3% within 24 hours, 94.4% after 36 hours and 96.3% after 48 hours[10].

As regards the efficacy of PGF_2 alpha for mid trimester termination, the results of study are comparable with those of study conducted at Lady Reading Hospital, Peshawar which showed a success rate of 86.66%[11].

A study which was conducted at the obstetrics and gynecology department of Bahawal Victoria Hospital, Bahawalpur, showed a success rate of 92% for PGF_2 alpha and a higher success rate of 96% for misoprostol[12].

Another study conducted at Tehran university of Medical Sciences, Iran using two different regimens of vaginal misoprostol showed success rate of 94%-100%[13].

As far as 2nd variable of study is concerned mean induction to termination interval was found to be 13.16 hours for misoprostol and 16.07 hours for PGF_2 alpha. This gives us P. value of 0.00 showing that induction to delivery interval of misoprostol is significantly shorter as compared to PGF_2 alpha.

The study was comparable with study conducted at National University Hospital, Singapore comparing vaginal misoprostol with intra-amniotic prostaglandins for mid-trimester termination of pregnancy. That study showed similar results. Mean induction to delivery interval of misoprostol was 16.2 hours which was shorter than induction to delivery interval of PGF_2 alpha which was 20.8

hours[14].

As we look at the local research work conducted on PGF_2 alpha, the results of this study are comparable to the study conducted at Postgraduate medical institute lady reading hospital, Peshawar which showed induction to termination interval of 16.5±9.03 hours[11].

Another study which was conducted at Jinnah Postgraduate medical Centre showed longer induction to termination interval for misoprostol in range of 18±11.58 hrs. This longer induction to miscarriage interval was probably due to lower dose of misoprostol used in this study which was only 50μg misoprostol used intravaginally[10].

Another study which was conducted at Alzahra Hospital of Rasht (Iran) showed mean induction to expulsion interval of 14.67±6.16 hrs for vaginal misoprostol which is comparable to this study[15].

The study conducted at Bahawal Victoria Hospital comparing misoprostol with prostaglandin $F_2\alpha$ showed induction to expulsion duration of 9.02±4.57 hrs for misoprostol and 14.06±6.22 hrs for $PGF_2\alpha$. This again shows that induction to expulsion interval of misoprostol was significantly shorter than $PGF_2\alpha$[12].

CONCLUSIONS

The results of this study indicate that vaginal administration of misoprostol is as effective and safe for 2nd trimester termination of pregnancy as prostaglandin F_2 alpha. However, misoprostol has additional advantage of being considerably cheaper and convenient as it does not require special storage conditions. Hence, misoprostol can be used as an alternative drug to PGF_2 alpha for 2nd trimester termination of pregnancy.

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