EXTRA-AMNIOTIC INJECTION OF ETHACRIDINE LACTATE (EMCREDYL) FOR TERMINATION OF PREGNANCY IN SECOND TRIMESTER

by

K. Rastogi,* M.S., D.G.O.

S. Tandon,* M.S.

V. K. Singh.** M.S.

and

S. N. Singh,*** M.D.

The method of evacuation of uterus from 12 weeks onwards is a problem to obstetrician even today. The chief aim is physiological delivery of foetus with safety to mother, various drugs through various routes have been tried but none have been found to be effective and safe. Two factors are tending to increase the demand of an efficient safe method of mid-trimester abortion. These are firstly recent advances in prenatal diagnosis of foetal malformation and secondly late attendance by some patients requesting termination of pregnancy.

An ideal method should combine ease of induction, freedom from side effects and a short induction abortion interval.

The search for a safer solution led to the discovery of Rivanol or Acrinol lactate. Cohen in 1846 first described the extraovular injection for termination of pregnancy in second trimester. It is a derivative of acridine, a yellow dye stuff with antiseptic action. It has been used as a 0.05 to 0.02% solution either locally or as a surgical skin antiseptic or internally as disinfectant for the urinary tract. It is a 6, 9 diamino-2-oxyethyl acridine lactate.

In Soviet Union Pytel and associates reported 5 cases of acute renal failure after extraamniotic instillation of rivanol. However, very large volume (500 to 700 cc) of 0.1% solution of Rivanol were used in these cases. In Japan on the other hand no serious complications have been reported. However the volume used in that country were no more than 30-200 ml of 0.1% solution. The use of ethacridine lactate dates from 1949 but mere extensive studies have been carried out only recently by Manabe (1969).

Nabriski and Kalmanovitch (1971) modified the original rivanol catheter technique by removing the catheter immediately after injection and their success rate was 94%. Carl Axel Ingemanson of Swedon (1973) compared the results of rivanol with extraamniotic injection of hypertonic saline and concluded that the overall results with rivanol were better

*Lecturer in Obstetrics and Gynaecology, G.S.V.M. Medical College, Kanpur.

Reader in Obstetrics and Gynaecology, G.S.V.M. Medical College, Kanpur.

***Reader in Pathology, G.S.V.M. Medical College, Kanpur.

Department of Obstetrics and Gynaecology, G.S.V.M. Medical College, Kanpur.

Corresponding Address:

Dr. S. Tandon, M.S.

Lecturer in Obstetrics and Gynaecology,

L-27, Medical College Campus,

Kanpur.

Accepted for publication on 17-10-79.

and the initial success rate was 74% with saline induction as compared to 94% in rivanol cathetor group with remarkedly few complications.

Ethacridine lactate administered extra-amniotically acts in 4 ways to procure abortion.

(a) Causes mechanical stripping of the entire sac from the uterine wall.

(b) It causes reflex release of oxylocin (Speikia, 1934; Kingenberg and Lipp, 1959; Lewis and Stillwell, 1971).

(c) The cathetor left in situ for 4 hours aids in mechanical stimulation of the uterus.

(d) It causes release of prostaglandins Gustavii (1974) suggested that any solution given extra ovularly causes release of lysosomal hydrolytic enzymes within the decidual cells which help in release of prostaglandin precursors from the membrane phospholipids and thereby help in synthesis of the prostaglandin.

Material and Methods

Hundred patients picked up at random between 12-20 weeks of gestation, were subjected to M.T.P. by extraovular injection of 0.1% Emcredyl. The amount of which varied according to period of gestation—100 cc at 12-17 weeks and 50 cc at 13-20 weeks of pregnancies.

The instillation was done in the operation theater. The patient was put in lithotomy position, anterior and posterior vaginal wall retracted. Anterior lip of cervix grasped with volsellum Foleys catheter No. 16 was put for 15-20 cm through the cervix in uterine cavity. 0.1% of emcredyl 50 cc or 100 cc according to period of gestation was instilled by a drip method within 10 minutes. The bulb of the catheter was inflated with 10 cc of distilled water. The other end of catheter was folded and tied with sterile thread. The whole process was done under all asepsis. The catheter was kept for 4 hours to prevent back flow of fluids. Patient was asked to be in bed for at least 4 hours expulsion of foetus within 72 hours was taken as success. Reinstillation was not done in any of the cases after the patient aborted the foetus along with the placenta was examined for its completeness. In cases of incomplete abortion evacuation was done.

Syntocinon drip was not started in any of the case and no antibiotic was given prophylactically. The patients were discharged next day after abortion and were asked to report after one week.

Observation and Results

In present series 88% cases uterine contraction started in 24 hours and in rest 12% cases within 48 hours. 80% of patients aborted within 72 hours and 16% cases took 96 hours to abort. Thus success rate was 96% with a failure of 4%. Reinstillation was not done in any case.

In Nabriski (1971) series contractions started in 4-8 hours and majority of patients aborted in a period of 24 hours, after injecting the solution. In case of failure a second injection was done, the next day or after 2 days together with oxytocin drip 95% of his patients in 20-24 hours.

Anjaneyulu *et al* (1977) reported that 81.4% aborted within 72 hours after first instillation and 100% after reinstillation. They used Unitocin (Spartin sulphate) 150 mg I.M. 1 hourly for 3 doses to assist the process of expulsion.

In the series of Gupta *et al* (1977) the success rate with Emcredyl was 28% in 48 hours and total 92% in 72 hours and method failure was 4%.

Complications

With emcredyl success rate was high and complication rate was less. In 12%

cases spongue exacuation was done after the abortion and 4% cases complained of abdominal pain. Tenderness was noted on examination which subsided after analgesics. There was no other complication seen. In the Soviet Union Pytel and associates (1963) reported 5 cases of acute renal failure, 4 of which were of a temporary nature however very large volume of rivanol were used in these cases (500-700 ml of a 0.1% solution). In Japan on the other hand no serious complications have been observed inspite of many years of extensive use of rivanol, however the volume used in that country were no more than 30-200 cc of 0.1% solutions. Nabriski (1971) reported 2 cases of cervical tear in his series and 2% cases needed curettage. Gupta *et al* reported 13.2% incomplete abortions in emcredyl group.

Conclusions

100 pregnancies were terminated by Emcredyl 80% patients aborted within 72 hours and 16% patients took 96 hours to abort. Thus giving an overall success rate of 96% with a failure of 4%. The advantage of this method over others are:

1. The technique was simple, does not need any complicated set of instruments, safe and physiologically effective. No cervical dilatation was required even in unmarried patients, there was no difficulty in passing the cathetors.

0.1% solution had wide range of safety. Its poten and widespread bactericidal properties minimised the danger of pervaginal infection after extraovular injection. In none of the cases infection was seen.

There were no complications except that 12%, cases required spongue evacuation and 0.13% cases had mild abdominal pain and tenderness after instillation of the drugs.

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