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RESEARCH ARTICLE

CLINICAL EFFECT OF HEMABATE IN PREVENTING AND TREATING POSTPARTUM HEMORRHAGE CAUSED BY UTERINE INERTIA.

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Abstract

Objective: To analyze the clinical effect of Hemabate in preventing and treating postpartum hemorrhage caused by uterine inertia.**Methods**: 80 cases of parturient women with high-risk factors of uterine inertia who delivered in our hospital between January 2017 and July 2018 were selected as subjects. With the approval of the ethics committee, parturient were divided into observation group (case number =40) and control group (case number =40) based on the random principle. In the observation group, Hemabate was given to prevent and treat postpartum hemorrhage, while in the control group, oxytocin was given to prevent and treat postpartum hemorrhage.**Result**: Compared with the control group, the incidence of postpartum hemorrhage in the observation group (7.5%) was significantly lower than that in the control group (20.0%), and the difference was statistically significant (P<0.05). The blood loss at 2h and 24h postpartum was significantly lower in the observation group than in the control group, and the difference was statistically significant (P<0.05). The incidence of adverse reactions, such as vomiting, hypothermia, headache and elevated blood pressure, was significantly lower in the observation group (7.5%) than in the control group (27.5%), and the difference was statistically significant (P<0.05).**Conclusion**: The application of Hemabate in the prevention and treatment of postpartum hemorrhage caused by uterine inertia can significantly reduce the incidence of postpartum hemorrhage, reduce the amount of postpartum hemorrhage, with low adverse reactions and higher drug safety.

Introduction:-

Delivering a baby is a fight between life and death for a mother(Wang, et al., 2018). Postpartum hemorrhageis one of the major causes of maternal death and critical injury(Gyamfi-Bannerman, et al., 2018).A blood loss of 500 Ml after natural delivery or 1000 mL after C-section is defined as postpartum hemorrhage(Newsome, et al., 2017).In 2015 alone it caused more than 80,000 worldwide maternal deaths(Borovac-Pinheiro, et al., 2018).Even in developed countries like Australia the rate and severity of postpartum hemorrhage is growing(Flood, et al., 2018). Making it utmost necessary to look for major causes and possible feasible remedies for postpartum hemorrhage.

Approximately per year 127,000 maternal deaths are caused by postpartum hemorrhage, uterus failure to properly contract after childbirth is one of the major cause of postpartum hemorrhage, without proper medical care a mother

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can expire within few hours(Saccone, et al., 2018). Uterine inertia is a major cause of postpartum hemorrhage, accounting for about 90% of the incidence of postpartum hemorrhage(Min, et al., 2016).Postpartum hemorrhage caused by uterine atony/inertia can cause massive hemorrhage in a short period of time, and even lead to DIC in severe cases, which has become a major threat to maternal life and safety.

Therefore, active prevention and treatment of postpartum hemorrhage caused by uterine inertia is an important measure to ensure maternal safety and reduce maternal mortality(Hebei , 2017). The key to prevent and treat postpartum hemorrhage caused by uterine inertia lies in strengthening maternal contraction. Only by strengthening maternal contraction can we achieve significant hemostatic effect in a relatively short time. In view of this, uterine massage and oxytocin are commonly used in clinic.

Oxytocin is a widely used means of prevention and treatment. Oxytocin, ergonosine and Leonurus injection are commonly used in clinic, but the prevention and treatment effects of the above oxytocins are limited (Chunfang & Lin, 2017). In order to further improve the prevention and treatment of postpartum hemorrhage caused by uterine inertia, Xinmupei was introduced into our hospital and achieved good results. The rest of the paper is portioned in the following manner. Section one contains objectives and methods including: 1.1 objectives of the study; 1.2 clinical methods and 1.3 statistical methods, section two is about the results of our findings it includes:2.1 comparison of incidence of postpartum hemorrhage among two groups of parturient women; 2.2 comparison of postpartum 2h and postpartum 24h bleeding between two groups and 2.3 Comparison of incidence of adverse reactions between two groups. Finally in section 3 we have discussed the results and implications of our study in detail.

Objectives and methods:-

Following explains the main objectives, clinical and statistical methods of our study.

Objectives of the study

Eighty parturients with high risk factors of uterine atony who delivered in our hospital from January 2017 to July 2018 were selected as the study subjects. This study excluded those with gastric ulcer, asthma and severe allergic constitution; those with prostaglandin contraindication such as hypertension and glaucoma; those with hematological diseases and coagulation disorders parturients (Yaoyu, 2017). With the approval of ethics committee, the mothers were divided into observation group (case = 40) and control group (case = 40) in accordance with random principle. The observation group consisted of 40 parturients, aged 22-37 years, with an average age of (27.8 + 1.2) years, 35-42 weeks, 39.2 + 0.6 weeks, including 28 primipara and 12 transpartum women, 23 vaginal deliveries and 17 cesarean deliveries. The control group consisted of 40 parturients, aged 21-38 years, with an average age of 28.3 (+1.4) years, 36-41 weeks, 39.6 (+0.8) weeks, including 30 primipara and 10 parturients, including 22 vaginal deliveries and 18 cesarean deliveries. There was no significant difference in the data between the two groups, P>0.05. The patients were aware of the contents of the study and signed the consent form.

Clinical methods

The observation group was given Xinmupei to prevent and treat postpartum hemorrhage. For cesarean section women, 250ug Xinmupei was injected into the uterus after delivery. For vaginal delivery women, 250ug Xinmupei was injected into the cervix at 6 or 12 o'clock or deep gluteal muscle after delivery. The above medication is for prevention. According to the specific delivery mode, the puerpera with postpartum hemorrhage are given repeatedly according to the above administration mode. The interval of administration is 15 minutes, and the total dosage is less than 500 ug. The control group was given oxytocin to prevent and treat postpartum hemorrhage. For cesarean section women, oxytocin 20U was injected into the uterus and 20U was intravenously injected after delivery. For vaginal delivery women, oxytocin 20U was injected into the cervix or deep gluteal muscles after delivery, and oxytocin 20U was intravenously injected at the same time. The above medication is for prevention. According to the specific delivery mode, the puerpera with postpartum hemorrhage are given repeatedly according to the above administration mode. The interval of administration is 15 minutes, and the total dosage is less than 120 U.

Statistical methods

SPSS21.0 is a data processing tool, in which the counting data and measurement data are expressed and entered in (%) and (%) respectively, and chi-square test and t-test are used to compare the above different types of data, with a = 0.05 as their test level.

Results:-

comparison of incidence of postpartum hemorrhage among two groups of parturient women

The incidence of postpartum hemorrhage in the observation group (7.5%) was significantly lower than that in the control group (20.0%). The difference was statistically significant (P < 0.05). The following table contains the relevant details:

Table 1:-Comparison of incidence of postpartum hemorrhage among two groups of parturient women

Group	Number of cases (n)	Number of postpartum hemorrhage cases	Incidence of postpartum hemorrhage
Observation group	40	3	7.5%
Control group	40	8	20.0%
Value of X^2			10.673
Value of P			<0.05

Comparison of postpartum 2h and postpartum 24h bleeding between two groups

The amount of bleeding in the observation group was significantly less than that in the control group at 2 h and 24 h postpartum (P < 0.05). The following table contains the relevant details:

Table 2:-Comparison of postpartum 2h and postpartum 24h bleeding between two groups (ML)

Group	Number of cases (n)	2h postpartum bleeding	24h postpartum bleeding
Observation group	40	210.17±39.16	307.17±11.95
Control group	40	308.55±12.73	368.27±13.56
Value of t		6.824	10.483
Value of P		<0.05	<0.05

Comparison of incidence of adverse reactions between two groups

The incidence of adverse reactions such as vomiting, low fever, headache and elevated blood pressure in the observation group (7.5%) was significantly lower than that in the control group (27.5%), and the difference was statistically significant (P < 0.05). The following table contains the relevant details:

Table 3:-Comparison of incidence of adverse reactions between two groups

Group	Number of cases (n)	Vomit	Low fever	Headache	Elevated blood pressure	Total incidence
Observation group	40	1	1	1	0	3（7.5）
Control group	40	3	4	2	2	11（27.5）
Value of X^2						12.524
Value of P						<0.05

Discussion:-

Postpartum hemorrhage is a common obstetric emergency, which can seriously endanger maternal life and health. Therefore, whether or not obstetric clinic can prevent puerpera early in perinatal period and take effective measures to control bleeding will have a direct impact on the success of rescue of puerpera. Although, with the development of current medical technology, the incidence of postpartum hemorrhage has been significantly controlled. At present, the incidence of postpartum hemorrhage in China is 2%-3%. Clinical studies indicate that 90% of postpartum hemorrhage is caused by maternal uterine inertia(Wei, 2016). In view of this, actively helping maternal recovery and strengthening uterine contraction is the key to effectively prevent postpartum hemorrhage, timely control of hemorrhage and reduce maternal mortality.

Uterine massage is a commonly used method to promote uterine contraction in obstetrics clinic, mainly through mechanical stimulation to enhance uterine contraction, but the effect of this method is relatively light, simple application cannot achieve a good effect of prevention and treatment of postpartum hemorrhage, clinics often use it as an auxiliary means(Shangmin, 2017). The use of contractions to strengthen uterine contraction is the first choice

for obstetrics. Oxytocin is the most commonly used uterine contractile agent in clinic. It is widely used in the prevention and treatment of postpartum hemorrhage caused by uterine inertia.

Oxytocin has a short half-life in the human body, which is 3-4 minutes. Oxytocin can only stimulate the contraction of the upper uterus(Xueyan, 2017). Clinical studies have shown that the sensitivity of the uterus to oxytocin depends on the relationship between the concentration of oxytocin and the amount of oxytocin receptor in the process of acting on the uterus through the receptor. When the receptor site is saturated, even if the drug dose is increased, it will not work. Therefore, when the dosage of oxytocin exceeds 40U, even if we continued to use oxytocin for treatment, there will be no significant effect, not only that, large doses of oxytocin will also increase the risk of hypotension and diuretic effects. Therefore, oxytocin is not the most ideal drug for prevention and treatment of postpartum hemorrhage caused by uterine inertia. For those who are not satisfied with medication, they can only turn to surgery. The main methods of operation are uterine artery ligation and internal iliac artery ligation. In severe cases, women even need hysterectomy, which will cause great harm to the physical and mental health of the puerpera. Therefore, a more safe and effective drug for prevention and treatment of postpartum hemorrhage caused by uterine atony is urgently needed in obstetric clinic(Dengxi, et al., 2016).

Xinmupei and Carboprost Ambutriol Injection, a derivative of natural prostaglandin F2α, have a strong role in promoting uterine contraction. After entering the body, it can play a role in promoting uterine contraction and increasing intrauterine pressure. It can make maternal blood on the surface of uterus and placenta detachment in a short time. Occlusion of the sinus and blood vessels results in rapid hemostasis. Xinmupei is a new prostaglandin substance. Compared with traditional prostaglandins, it has unique advantages. It is aminobutyric ester of 15-methylprostaglandin F2α. Its 15-hydroxyl group can be substituted with methyl group to resist the inactivation of 15-hydroxy dehydrogenase, so that it can be half of the body. The life of the drug was prolonged significantly, and its action time could reach 2-3 hours, so that it's biological activity was significantly enhanced, thus greatly reducing the dosage of the drug.

Due to the reduction of dosage, maternal adverse drug reactions have also been effectively reduced. Moreover, the onset time of HMP is faster, and the maximum concentration of 15s can be reached after entering the body. Therefore, Xinmupei has significant preventive and therapeutic effects on postpartum hemorrhage caused by uterine atony, especially in the treatment of intractable postpartum hemorrhage. According to relevant clinical reports, the total effective rate of Xinmupei in the treatment of postpartum hemorrhage caused by uterine atony is as high as 95%.

From the results of this study, we can clearly see that Xinmupei plays an important role in the prevention and treatment of postpartum hemorrhage caused by uterine atony. To sum up, the application of Xinmupei in the prevention and treatment of postpartum hemorrhage caused by uterine atony can significantly reduce the incidence of postpartum hemorrhage, reduce the amount of postpartum hemorrhage, and the adverse reactions are low, drug safety is high.

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