

Adverse reactions analysis and prevention of antiseptic drug in the obstetrics and gynecology nursing

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Abstract: Antimicrobial agents are widely used in gynecologic inflammation and surgical period, so as to cure some infectious diseases, reduce the chance of surgical incision infection, but at the same time, there are many adverse reactions. The use of nursing interventions in obstetrics and gynecology can significantly reduce the adverse drug reactions in the treatment. The results showed that the incidence of adverse reactions in the observation group was 8.8%, while that in the control group was 15.6%. The incidence of adverse reactions in the observation group was significantly lower than that in the control group ($P < 0.05$). The results showed that the nursing intervention in obstetrics and gynecology could reduce the adverse drug reactions. In a word, the nursing intervention of obstetrics and gynecology can greatly reduce the adverse reaction of antibiotics and has certain application value. It is worth popularizing in clinical practice.

Keywords: Antiseptic drugs, anaphylaxis, obstetrics and gynecology, drug resistance.

INTRODUCTION

In recent years, antibiotics are widely used in gynecological inflammation and surgical period, to cure some infectious diseases to reduce obstetrics incision infection opportunity (Bergström *et al.*, 1967; Li, 2014). But in the treatment, it also can produce a lot of adverse reactions, reactions such as toxicity, allergic reactions, phlebitis (Lu, 2014; Sue *et al.*, 2014). At present, there are many ways to prevent the adverse reaction of antibiotics, in which nursing intervention is one of the most important and effective prevention methods (Gao, 2015; Nicholas *et al.*, 2017). In recent years, the use of obstetrics and gynecology nursing interventions has significantly reduced the adverse reactions in the treatment of obstetrics and gynecology diseases (Hu, 2013; Bushnik *et al.*, 2014). The main pathogens causing infection are *Staphylococcus*, *streptococcus*, *Escherichia coli* and anaerobic bacteria (Cabaravdic *et al.*, 2010). When selecting antibiotics, we should take antimicrobial spectrum, safety, clinical experience, cost and drug resistance as reference standard, and take preventive medication, experience therapy or etiological treatment for the known pathogens according to the severity and purpose of the drug (Jarvinen *et al.*, 2007; Julie *et al.*, 2017). In order to implement the guiding principles of clinical application of antibacterial drugs and promote the rational application of antibiotics in obstetrics and gynecology department, we investigated the application of clinical drugs.

When using antimicrobial drugs for treatment, we should not only consider the physical condition of patients, but also consider the needs of patients and avoid the adverse effects caused by antibiotics. (Eum *et al.*, 2011; Liu *et al.*, 2016). For example in pregnant patients for antimicrobial treatment, physicians should avoid the use of tetracyclines and quinolones, adverse effects on children patients with this will be reduced to a minimum, reduce the adverse reactions of children, prevent child physical weakness or some other problems (Cosselman *et al.*, 2015). If we need to use such antibacterial drugs at the time of treatment, we must make a timely detection of the blood concentration of gynecologic patients, not only to ensure the safety of patients, but also to ensure the antibacterial effect of drugs (Mellotte *et al.*, 2015). For women in gynecology and obstetrics period, the milk will be discharged after the body comes into the body. Although the concentration of antibacterial agents in the milk is low, it still has a great threat to children's resistance. Therefore, if lactating women have to use antibacterial drugs for treatment, they must give up breast feeding to ensure their children's good physical development.

MATERIALS AND METHODS

General information

We chose 180 patients who were discharged from obstetrics and gynecology surgery in 2016, and analyzed the general condition, types of operation and the usage of antibiotics, including the type of drugs, usage and dosage, duration of medication and so on. The antibiotics used mainly include B- lactam, macrolides, cephalosporins, fluoroquinolones and clindamycin. All patients were

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divided into the observation group and the control group according to the random digital table method, with 90 cases in each group. The age of the observation group was 18~70 years old, the average age was (42.5±5.3) years, the control group was 18~69 years old and the average age was (41.8± 6.4) years old. There was no significant difference in the general data between the two groups ($P>0.05$). All patients were approved by ethics committee of the fifth people's hospital of Jinan. Approval number of the ethics committee as 15FPHJ21, and all patients have signed on the informed consent.

Research method

The adverse reactions were mainly observed after drug use, and the main adverse reactions were as follows: (1) the toxic reaction: ototoxicity and nephrotoxicity, hepatotoxicity, neurotoxicity, gastrointestinal toxicity and immune system; (2) anaphylaxis: dyspnea, urticaria, allergic dermatitis, anaphylactic shock; (3) phlebitis and alcohols abstinence like reaction.

Control group: the use of routine care, the use of penicillin and cephalosporin should be done before the skin test, the skin test can be used behind the negative. The history of allergies should be carefully asked before the use of other antibiotics. The drug adverse reactions, such as infusion reaction and allergic reaction, were observed closely after drug use. Observation group: the nursing intervention was carried out on the basis of the control group. (1) To strengthen the training of nurses' knowledge of antagonism, master the usage and dosage of common antibiotics and adverse reactions, and master the methods to deal with the adverse reactions. (2) We should strictly master the time of drug delivery after the preparation of antibacterial drugs, so it is best to do it now. (3) Closely monitoring the reaction after medication. The main contents include vital signs, nausea, vomiting, abdominal pain, diarrhea and other gastrointestinal symptoms and urticaria, whether there are changes in secretions, excrement and vomit. (4) Should be familiar with the compatibility of various drugs?

STATISTICAL ANALYSIS

The SPSS 19 statistical software was used to analyze it. The measurement data were represented by $\bar{X}\pm s$, and the t test was performed. The count data were expressed as a percentage and the χ^2 test was performed. The difference between $P < 0.05$ was statistically significant.

RESULTS

Incision healing and operation

First of all, we analyzed the operation of all the patients, and the type of operation was shown in table 1. Class I wound healing rate was 100%, and class a healing rate of class II incision was 98.15%. The bacterial contamination

of type I surgical incision mainly comes from the air, surgical instruments, surgical fabrics, dressings, operators and the patient's own skin.

Preventive application of antimicrobial agents

For the use of antibiotics, the commonly used three kinds of antibiotics are commonly used, including B-lactams, fluoroquinolones and aminoglycoside antibiotics and so on. The main preventive use of antibacterials in our hospital is shown in table 2. The statistics of antibacterials to prevent drug use are shown in table 3.

The observation group of toxicity in 2 cases, 3 cases of allergic reactions, 0 cases of disulfiram like reaction, 3 cases of phlebitis, the adverse reaction rate was 8.8%; 3 cases of control group toxicity, 6 cases of allergic reactions, 2 cases of disulfiram like reaction, 3 cases of phlebitis, the incidence rate of adverse reaction was 15.6%, observe rate of adverse reactions was significantly lower than the control group, the difference was statistically significant ($P<0.05$) (table 4).

DISCUSSION

Antibacterial drugs have the effect of bactericidal and inhibition of bacterial activity, which can prevent and control the infection and invasion of pathogenic bacteria (Pu, 2015). Usually, there is no need to use antibiotics in the prevention of drug use, but the scope of operation is large, the duration is long, the chance of contamination is increased, and surgery involves important organs, once infection occurs (Qi *et al.*, 2015). It will cause serious consequences. Prophylactic use of antimicrobial agents against *Staphylococcus aureus*, *Escherichia coli* and other special bacteria invade the surgical wound, or *Streptococcus viridans* and *Enterococcus faecalis* infected blood circulation, with satisfactory effect, but not abuse, such as to prevent the use of a variety of bacterial invasion and infection of drug-resistant bacteria, but will have been difficult to achieve the desired effect (Shi *et al.*, 2010; Tsiaras *et al.*, 2016). Therefore, when we use prophylactic antibiotics, we should pay attention to whether there are indications. What kinds of antimicrobial agents are applied and whether they are sensitive? They should be selected according to the principles of safety and effectiveness, small adverse reactions, easy administration and low price (Bergström *et al.*, 1967; Li, 2014). The results showed that the incidence of adverse reactions in the observation group was 8.8%, while that in the control group was 15.6%. The incidence of adverse reactions in the observation group was significantly lower than that in the control group ($P<0.05$). The results showed that the nursing intervention in obstetrics and gynecology could reduce the adverse drug reactions.

The use of antimicrobials is the first choice for gynecologic inflammation (Jarvinen *et al.*, 2007).

Table 1: Type of patient's operation

Type of operation	Number	Constituent ratio
Caesarean section	78	43.3
Bilateral fallopian tube ligation	31	17.2
Salpingectomy	25	13.8
Hysterectomy	16	8.8
Other surgery	15	8.3
Pelvic adhesions	9	5
Hysteromyomectomy	6	3.3

Table 2: Prophylactic use of antibacterial drugs

Drug name	Number	Constituent ratio
Cefuroxime Sodium for Injection	83	46.1
Ceftazidime for injection	52	28.8
Metronidazole	17	9.4
Tinidazole	8	4.5
Clindamycin	4	2.2
Cefradine Capsules	2	1.2

Table 3: The time of antibacterials to prevent drug use

Prophylactic use of drugs	Number	Constituent ratio
2~48 h before operation	28	15.6
0.5~2 h before operation	136	75.6
After the operation	16	8.8

Table 4: Comparison of adverse reactions between the two groups

Group	Cases	Toxic reaction	Anaphylaxis	Disulfiram like reaction	Phlebitis	Incidence rate
Observation group	90	2	3	0	3	8.8
Control group	90	3	6	2	3	15.6

Through the drug sensitivity test, we choose targeted antibiotics, so that we can get twice the result with half the effort in treating gynecological inflammation (Wu *et al.*, 1996). However, adverse reactions often occur during the use of antibiotics, such as toxic reaction, allergic reaction, phlebitis, abstinence like reaction, and even sudden death. So, what kind of methods can be used to minimize the adverse drug reactions will become the focus of attention. In recent years, studies have found that targeted nursing interventions can reduce adverse drug reactions (Were *et al.*, 2014; Xuan, 2015). Antibacterial drug toxicity including ototoxicity and nephrotoxicity is the adverse reactions of macrolides in common, through careful nursing, master the use of dose, adjust the infusion speed, achieves the early observation of toxic reaction to a certain extent, can reduce toxicity (Zhu *et al.*, 2015). Allergy is an adverse reaction of penicillins and cephalosporins in common, through careful allergy skin test strictly according to the process of operation, three out of seven on the drug reaction monitoring, nursing intervention after treatment, largely reduces the incidence of allergic reactions (Cabaravdic *et al.*, 2010; Gao, 2015). The disulfide like reaction caused by the use of cephalosporins and the drinking of 7D in the drug can be

significantly reduced through nursing education. In addition, the infusion time is too long or too fast or when the needle is not fully in accordance with the principles of aseptic phlebitis, may, therefore, the effective nursing intervention, can significantly reduce the phlebitis.

CONCLUSION

The results showed that the incidence of adverse reactions in the observation group was 8.8%, while that in the control group was 15.6%. The incidence of adverse reactions in the observation group was significantly lower than that in the control group ($P < 0.05$). The results showed that the nursing intervention could reduce the adverse drug reactions. It is worth popularizing in clinical practice. There are many kinds of antibacterial agents and widely used in gynecological treatment. The common diseases in obstetrics and gynecology are anaerobic infections and anaerobic bacteria are resistant. In order to avoid the emergence of drug-resistant strains in the obstetrics and gynecology department, the medical staff should pay attention to the reasonable dosage in the process of drug use, and the drug research departments should also constantly develop new antibacterial drugs to improve the efficacy of antibacterial agents.

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