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PREVENTION OF SERIOUS INFECTIONS DURING PREGNANCY

Thesis

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ABSTRACT

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Name of thesis Prevention of Serious Infections During Pregnancy		
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<p>The purpose of the thesis is to describe the prevention of serious infections during pregnancy. The aim is to improve the knowledge of patients and nurses about serious infections during pregnancy.</p> <p>The thesis studies literature by different data bases, like Cumulative Index to Nursing and Allied Health literature (CINAHL), Ovid, SAGE journals. It also included some valuable web resources and year limit to support the thesis.</p> <p>The results of the thesis are about the two research questions. The first one is about the most common serious infections during pregnancy. The another one is about the nursing interventions to prevent serious infections in pregnant patients. The thesis also shows how to treat patients with effective nursing measures and prevention of the serious infections during pregnancy.</p>		
Key words Serious infection, Nursing interventions, Prevention, Pregnancy		

ABSTRACT

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1 INTRODUCTION

Pregnancy is a normal and healthy state that many women aspire to be at some point in their lives. However, pregnancy also can make women more susceptible to certain infections. Pregnancy may also make these infections more severe. Even mild infections can lead to serious illnesses in pregnant women. Infection is the invasion of an organism's body tissues by disease-causing agents, their multiplication, and the reaction of host tissues to these organisms and the toxins they produce. Infections are caused by infectious agents including viruses, viroids, prions, bacteria, nematodes such as parasitic roundworms and pinworms, arthropods such as ticks, mites, fleas, and lice, fungi such as ringworm, and other parasites such as tapeworms and other helminths. (Cherney 2016.)

Most common infections occur during pregnancy, so pregnant women have high risk for developing viral and bacterial infections. Some infections can be passed to the fetus before or during birth. They also damage the fetus or cause a miscarriage or premature birth. Bad health habits, poor diet, the unreasonable sex during pregnancy can cause infection during pregnancy. As a nurse, it is very important to know about the infection during pregnancy. It is the responsibility

of a nurse to help pregnant women to prevent infection and give health education to the pregnant women. (Lara 2016.)

The pregnant women are peculiarly vulnerable to infection. It not only makes the pregnant women sick, but also influences the baby. Fortunately, pregnant women may be immune to some infectious diseases. However, after the infection during pregnancy, some bacteria can pass through the placenta or infect the baby in the process of the birth. If it happens, it may have serious consequences for the fetus. What's more, if the pregnant women are infected by certain diseases during pregnancy, it will make the illness more serious and cause complications such as premature. Delivery although there is no way to completely avoid infection during pregnancy, we can take some measures to reduce the likelihood of illness. If the pregnant women are infected with a disease during pregnancy, we can also take some measures to reduce the chances of having some serious consequences of pregnant women and babies. Therefore, antenatal examination is very important. (Barss 2016.)

The reason why I chose this topic is that I have some experience on gynecology and obstetrics. And I saw a lot of pregnant women who had some slight infection with vagina during pregnancy. Then some of them got worse later. As a nurse, I want to make the patient find the symptoms

at the first time because the pregnant women's health is important at that special time. If the symptoms of some slight infection can't be found, it will become the serious infections. After that, the infants also will be influenced. I think the period of pregnancy is the happiest time, so I want every pregnant woman to have a wonderful experience during pregnancy.

2 FRAMEWORK

This chapter explains the causes and preventions of serious infections during pregnancy. It will also talk about the purpose for the nurse when we meet the patient who has the serious infection during pregnancy period.

2.1 Serious infections during pregnancy

Vaginitis, also known as vaginal infection and vulvovaginitis, is an inflammation of the vagina and possible vulva. It can result in discharge, itching and pain and it is often associated with an irritation or infection of the vulva.

Urinary tract infection (UTI) is an infection that affects part of the urinary tract. When it affects the lower urinary tract, it is known as a bladder infection (cystitis). When it affects the upper urinary tract, it is known as kidney infection (pyelonephritis).

Intrauterine infection is refers to the placenta, fetal membrane, amniotic fluid, or premature rupture of membranes, the fetus infected by bacteria in the vagina or cervix.

As we all know, the causes of infection during pregnancy are complicated and varied. The most common infections are vaginal infection, urinary tract infection and intrauterine infection. Pregnancy vaginitis is due to the change of hormone levels during pregnancy. Vaginal PH is easy to produce corresponding change and to develop bacterial vaginal disease. (Johnson 2016.)

A urinary tract infection (UTI), also called bladder infection, is a bacterial inflammation in the urinary tract. The risk for UTI's increases from the 6th week to the 24th week for the pregnant women. Urinary tract infection during pregnancy is a higher incidence of pregnancy disease, 6% to 10% of pregnant women will be infected by it. After pregnancy, placenta can generate secretion of progesterone. Because of the effects of progesterone, pregnant woman's ureter and renal pelvis and calyces hypertrophy expansion. Then ureteral peristalsis is abate, leads to the lag flow of urine. At the same time, the gravid uterus gets bigger and bigger and it will also oppress the ureter directly and makes the urine stream slower. Pregnant women's urine often contains a small amount of sugar, so the bacteria can easily invade at the urinary tract. So the pregnant women are susceptible to urinary tract infections. Common symptoms are lower abdominal pain, frequent urination, urgency, urinary pain, bloody urine and less urine. Assay test is given priority to with the increase of white cells and pus cells. (Kenny 2016.)

The bladder, urethra, renal pelvis and renal parenchyma inflammation are referred to as urinary tract infections. Pathogenic bacteria cause urinary tract inflammation, 80% of them is the intestinal escherichia coli, proteus and streptococcus faecalis. Pregnant women are easily affected by urinary tract infection that breaks out repeatedly. The key of preventing recurrence is to detect it early, treat early and treat properly. (Chakraborti 2016.)

Intrauterine infection, also called congenital infection or mother-to-child transmission of diseases, refers to the infected pregnant women during pregnancy. It causes fetal in utero infection. Many pathogenic microorganisms can cause fetal congenital infection. It is the most widespread intrauterine infection to be caused by a virus. Hepatitis b virus and cytomegalovirus are two main causes of intrauterine infection. Found in the early stages of pregnancy intrauterine infection is one of the most important measures to prevent mother-to-child transmission disease. (Kemp 2014.)

Pregnancy vaginitis is caused by pathogens from the bacteria that are living in the vagina and outside invading pathogens. General components are pregnancy vaginitis, vaginal candida vaginitis and trichomonas vaginitis. In order to reduce pregnancy vaginitis, wash the underwear

in at least 60 degrees hot water. Using condoms to prevent cross infection and repeated infection between the couple. When it is necessary, the husband also needs to go to see the doctor. The pregnant patient should check if the infection should be treated. They should have a normal diet and exercise regularly in order to maintain normal blood sugar level. Urine sugar content increases during pregnancy. Due to the metabolism in the specific period, it is easy to suffer from diabetes mellitus. Once the pregnant women suffers from the diabetes mellitus, vagina glycogen content will be higher. As pregnant women's resistance reduces during the pregnancy, mold resistance is much lower. (Johnson 2016.)

Early detection, early treatment and proper treatment are the keys to prevent recurrence. During pregnancy vagina secretion will increase accordingly, and because affected by the hormone, secretion of PH is reduced, it is advantageous to the local bacterial breed, to become the source of infection. By a gradual increase in uterus oppression, the expansion of the ureter can passivity. At the same time under the action of progesterone, ureteral wall decreases muscle tension, peristalsis is abate, slows down, make bacteria against the current. In the urine pregnancy renal threshold of reducing sugar, glucose, amino acid content is increased, it is easy to breed bacteria. By the late pregnancy swollen uterus causes oppression on bladder and ureter, these can lead to poor urine flow and urinary retention. Retention of urine is not

only for urinary tract mucosa stimulation, and it becomes easy to create convenient conditions of bacterial growth. (Kenny 2016.)

2.2 Nursing interventions

Due to hormonal changes during pregnancy, vaginal discharge will increase. If a pregnant woman indicates secretions increase with stench color change, burning, itching, secretion, there may be a bacterial infection. So nurses should be ready for the communication between pregnant women. We should ask the symptoms that the pregnant woman has during pregnancy in order to get more accurate diagnosis. Don't use disinfectant or various cleaner frequently in order to rinse vulva and vagina. We had better not to use all kinds of lotions. We can use the lotion meant only for the pregnant women. We should teach the patients some basic precautions, such as wearing cotton underwear and changing underwear frequently. They should wear clothes in which they can breathe freely and shouldn't wear tights or skinny jeans. Clean the anus after defecating and avoid taking candida of anus into the vagina. The public toilet is no exception. Telling pregnant women to keep the mood cheerful, because of psychological reasons also reduce the body immunity, make candida set in. Pay attention to food hygiene, to fully cooked meat, avoid the cooked food which is contaminated with raw meat.

Pay attention to the daily health and e.g. pets every day to get rid of the cat feces. It is important to wash hands thoroughly after contact with animal waste. (Barss 2016.)

A simple blood test can detect the chicken pox, and rubella infection immunity. Antenatal examination may also detect undiscovered infections, like a urinary tract infection, group B streptococcus infection, hepatitis B, HIV infection. (Smaill & Vazquez 2015.) If pregnant women believe that they have been in contact with the source of infection, they have serious illness or are ill, there should be timely medical treatment, which usually can help to avoid complications. In addition, women can also take some simple measures, to reduce the possibility of infection during pregnancy, like to wash their hands often, not sharing the cup or utensils, not changing the cat litter in person, when growing flowers and plants in the yard putting on the gloves, and staying away from any infectious disease patients. Safe sex helps to avoid many sexually transmitted diseases. Going to see the dentist regularly can help prevent gum disease and dental disease, it will reduce the risk of preterm birth. One can also take measures such as: staying far away from diseases caused by food, such as avoiding eating certain foods, washing fruits and vegetables, to ensure that meat, fish and eggs are well done before eating. (Wing, Fassett & Getahun 2011.)

2.3 Nurse's duty

As a registered nurse we should love the nursing career and deeply love the nursing work. Nurses must have the dedication and service for human health. Nurses should have the honest character, high moral accomplishment and the noble moral sentiments. Respect patients, all patients are equal, we should not have a racial discrimination. Nurses should have the certain knowledge of culture and the humanities, nursing theory, and to participate in acquiring the basic knowledge of nursing education and nursing research. Capability of nursing work, and having the courage to delve into the business technology, maintain a high level of care. Working as a nurse means having to deal with terribly sick people and that often involves various bodily fluids. Registered nurses should have critical thinking skills because nurse will need to assess a patient's health, as well as detect changes in symptoms, health or pain, and will need to know when action is necessary. (Tanja 2014.)

As nurses, we should have good nursing skills to apply to nursing procedures to patients or tackle potential health problems. With peers and others, one should maintain good relations of cooperation, mutual respect, friendship, unity, cooperation. Nursing jobs require not only treating the patient who is injured or sick, but also offering emotional support and advice to patients

and their families. We also need to take care of paperwork, help doctors diagnose patients and provide advice and follow-up care. For patients with high sense of responsibility, compassion and love. Rigorous style of work detail, initiative, decisiveness, agility, seeking truth from facts. Paying attention to civility, norms, affability. Mental health, emotional stability, tolerance, open mind, strong physique. (Tanja 2014.)

3 RESEARCH OBJECTIVES, PURPOSE AND QUESTIONS

The purpose of the thesis is to describe the prevention of serious infections during pregnancy.

The aim is to improve the knowledge of patients and nurses about serious infections during pregnancy.

The research questions are:

1. What are the most common serious infections during pregnancy?
2. What are nursing interventions to prevent serious infections in pregnant patients?

4 METHODOLOGY

This chapter describes the literature review, data collection, data analysis and considerations of ethical issues.

4.1 Literature review

The literature review is an overview of main report writing and from other resources in a selected study case. The sources mentioned in the review may include the information from journal articles. The literature review will bring the contents of descriptions, summaries and function of each source. It is sometimes presented as a distinct section of a graduate thesis or dissertation. (Booth 2012.)

Moreover, when people choose the topic to write, so they need to concern about the literature review at first. The literature review can become a small project in itself. That is how important it is to show your solving skills of: reading, researching, understanding the study case and define it. The presentation of conducting and reporting your literature review can help you to develop your own thoughts about your study case. After reading your literature review, the

reader can clearly know how out-performing you have up to date awareness of the relevant work of others, and whether the research, and surveys you made are relevant. The basic target of literature review is to build the system that matches with research of the issues and problem. For example, we can identify the literature review in three levels below: Situate the subject and the scope of the study case. Search the sources from articles to find information that are relevant to your topic. Read and select the sources which are determined to be suitable to the topic. Interpret the analysis and discuss to find out the conclusions of the sources which are chosen. (Machl 2012.)

4.2 Data collection

Data collection is the systematic approach to gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest. Data collection enables a person or organization to answer relevant questions, evaluate outcomes and make predictions about future probabilities and trends. (Rouse 2016). My data was acquired from different databases such as Cinahl, Ovid and SAGE Premier. My inclusion criteria are the keywords to search about my thesis topic. I used “pregnancy, serious infection, prevention and nursing interventions” to search it. Then I found a lot of articles from these web sites. But it was

too wide for me to search the information. So I continued to use the words “Nursing & prevention about pregnancy vaginitis, urinary tract infection (UTI), intrauterine infection, daily hygiene” to make my reaching more accurate. My criteria of exclusion were the year of the articles, books, surveys, web sites. I filtered out the year before 2011. Because the articles are very old, so I studied with in the limit years from 2011-2017. Some of the articles could not be opened. And some of the articles were not fit into the content of my topic. So after I read the articles that I found, I chose 10 articles to use in it. It's very useful for me to know about the differences between China and Finland that I want to research.

Databases [search result]: Cinahl (18), Ovid (77), SAGE Premier (146)
Databases [final results]: Cinahl (2), Ovid (1), SAGE Premier (7)
Keywords: Serious infection, Nursing interventions, Prevention, Pregnancy
Inclusion: Nursing & prevention about pregnancy vaginitis, urinary tract infection (UTI), intrauterine infection, daily hygiene.
Year limit: 2011-2017

4.3 Data analysis

Data analysis refers to sifting, organizing, summarizing, and synthesizing the data so as to arrive at the results and conclusions of the research. In quantitative research, the data is in numerical form, or some form which can be converted into numbers. Qualitative data analysis techniques deal with non-numerical data, usually linguistic units in oral or written form. (Gale, Heath, Cameron, Rashid & Redwood 2013.) My data was acquired from different databases, like Cinahl, Ovid and SAGE Premier.

I found 10 articles that can helped me from the databases. There are a lot of sources in our school library to support my thesis. It helped me a lot to know the information about the prevention of serious infections during pregnancy. According to these data, I know how to improve the nursing skills and the nurse's duty. I read all the articles and chose the most important key words in it. Then I combined the key words into the sentence.

ARTICLE NAME & JOURNAL	AUTHORS & YEAR	CONTENT & RESULTS OF ARTICLES
<p>Urinary tract infections during pregnancy - an updated overview</p> <p>Wolters kluwer</p>	<p>Szweda, H. & Jozwik, M.</p> <p>2016</p>	<p>This article is talking about urinary tract infection. It is one of the most common infections during pregnancy. And the difference of three urinary tract infections. They are asymptomatic bacteriuria, cystitis, and pyelonephritis. Three clinical types of urinary tract infection's symptoms. Maternal and fetal suffering from urinary tract infection may lead to serious complications. So we need timely treatment. According to the symptoms of patients, they should be treated with antibiotic therapy.</p>
<p>Treatments for symptomatic urinary tract infections during pregnancy.</p> <p>Cumulative Index to Nursing and Allied Health literature</p>	<p>Vazquez, J. & Villar, J.</p> <p>2011</p>	<p>This article shows the treatments for the patient who has symptomatic urinary tract infection during pregnancy. The author adopted enough data to prove that despite antibiotic treatment of urinary tract infection treatment is effective. According to different drugs to achieve for the treatment of symptomatic urinary tract infections. Because of the unreasonable medication can lead to premature birth and high fever</p>

<p>Interventions for preventing recurrent urinary tract infection during pregnancy.</p> <p>Cumulative Index to Nursing and Allied Health literature</p>	<p>Schneeberger, C., Geerlings, S., Middleton, P. & Crowther, C.</p> <p>2015</p>	<p>This article is talking about recurrent urinary tract infections (RUTI). It means that the pregnant women may have recurring happen urinary tract infection again and again. And it shows it was very common among women who are pregnant. It may cause serious adverse pregnancy outcomes. It's mainly talking about the Interventions used to prevent RUTI in pregnant women can be pharmacological (antibiotics). Make investigation about the pregnant women. To prevent pregnant women take overdose of the drug. To prevent serious complications.</p>
<p>Urinary tract infection as a Preventable cause of Pregnancy complications: Opportunities, challenges, and a global call to Action</p> <p>Pg 59-69</p> <p>Journal of Diagnostic Medical Sonography.</p>	<p>Nicole, M., Gilbert, P., Valerie, P., Scott, H., George, M., Warren, G., Lewis, P., Amanda, L. & Lewis, P.</p> <p>2013</p>	<p>This article tries to breakdown the infection of UTI among pregnant women. During pregnancy, the woman will face up with some risks due to UTI such as risks of maternal and neonatal morbidity and mortality. According to the numbers of research studies on pregnancy, doctor found out that UTI is increasing with high speed. They recognized this circumstance seems to be global and significant. The article tried to warn the world that UTI is a real threat to every pregnant woman all over the world. It can happen in every country and they recommend to discover the best treatment to avoid all barriers from the process to cure for people. Hence, they are calling for non govern-</p>

		ment organization , researchers , embold en-government to do their part to make urine screening and UIT measures a reality for all pregnant women.
Vaccination in Pregnancy Journal of Diagnostic Medical Sonography.	Zain, A., Shavell, V. & Gonik, B. 2011	This article is talking about vaccination to prevent serious infections during pregnancy. It is one of the most effective strategies to prevent morbidity and mortality from infectious diseases. Exception of live viral or live bacterial vaccines, others are generally considered to be safe for use during pregnancy. It is important that we need tell the pregnant women about the benefits and the risks if they are receiving the vaccines. Give the vaccination guidelines to the pregnant women.
Viral infection during pregnancy Journal of Diagnostic Medical Sonography.	Carslaw, H. & Cosh, A 2014	This article shows that the pregnant women and the fetus can have a significant impact on the virus infection and serious consequences to the unborn child. It means that viral illness in pregnancy can affect the fetus. This article also shows the knowledge of the risks that different viral infections pose to the fetus. It also shows how to assess and manage viral infections in pregnancy.

<p>Managing Sexually Transmitted Infections in Pregnant Women</p> <p>Journal of Diagnostic Medical Sonography.</p>	<p>Gupta, N. & Bowman, C.</p> <p>2016</p>	<p>This article is aimed to define “what is STI” how it is infected to the pregnant woman and infants. The common and controllable STIs are Chlamydia trachomatis, Neisseria gonorrhoeae, human papillomavirus (HPV), herpes simplex virus (HSV), Trichomonas vaginalis and syphilis.</p>
<p>Trichomonas vaginalis infection in Nigerian pregnant women and risk factors associated with sexually transmitted infections</p> <p>Journal of Diagnostic Medical Sonography.</p>	<p>Oyeyemi, O., Fadipe, O. & Oyeyemi, I.</p> <p>2015</p>	<p>Trichomoniasis influenced the pregnant women and neonatal's health. This article is talking about Trichomonas vaginalis and other common sexually transmitted infections in pregnant women. Also shows the risk factors associated with this kind of infection. The high prevalence of trichomoniasis vaginalis in pregnant women who at the early gestational age have high risk. Improved education of women on safe sex is very important.</p>
<p>Intrauterine Candida albicans Infection Causes Systemic Fetal Candidiasis With Progressive Cardiac Dysfunction in a</p>	<p>Stock, S., Patey, O. & Thilaganathan, B.</p> <p>2016</p>	<p>This article is talking about the intrauterine candida albicans in early pregnancy. The author used a well-validated sheep model of early pregnancy to show that intrauterine Candida albicans infection involves the fetus and causing systemic infections, like blood, tissues and cerebrospinal fluid infection. The biggest</p>

<p>Sheep Model of Early Pregnancy</p> <p>Journal of Diagnostic Medical Sonography.</p>		<p>changes in fetuses are huge amounts of inflammation in the lung and liver. A little bit in the heart, but it still causes the fetal cardiac dysfunction.</p>
<p>Placental and Fetal Findings in Intrauterine Candida Lusitaniae Infection Following in Vitro Fertilization and Embryo Transfer</p> <p>Journal of Diagnostic Medical Sonography.</p>	<p>Huang, M., Cham, E., Eppes, C., Gerber, S., Reed, K. & Ernst, L.</p> <p>2014</p>	<p>This article is a report on healthy women through in vitro fertilization (ivf) pregnant with triplets. But in 16 weeks of pregnancy, premature rupture of membranes occurred. Later developed into the oligohydramnios. In the choice after the termination of pregnancy, microscopy and molecular analysis indicated that it was related to Candida lusitaniae chorioamnionitis. It shows that Candida lusitaniae can cause intrauterine infection. And we need to raise awareness on Candida lusitaniae.</p>

4.4 Ethical considerations

Ethical Considerations can be specified as one of the most important parts of the research.

Ethics considerations are the human moral behavior, and moral relations reflect universal law, which is guided by the basic principles in nursing ethics, and have formulated the specific code of conduct. It is the norms or standards for conduct that distinguish between right and wrong.

Every deception or exaggeration about the aims and objectives of the research must be avoided. Every type of communication in relation to the research should be done with honesty and transparency. Every type of misleading information, as well as representation of primary data findings in a biased way must be avoided. Affiliations in any forms, sources of funding, as well as any possible conflicts of interests have to be declared. (David & Resnik 2015.)

5 RESULTS

This chapter is the result of the articles that I studied.

5.1 What are the most common serious infections during pregnancy?

Most common serious infections during pregnancy are pregnancy vaginitis, urinary tract infection (UTI) and intrauterine infection. Both pregnancy vaginitis and urinary tract infection can cause intrauterine infection. Due to hormonal changes during pregnancy, vaginal secretions increase. If the pregnant mother's secretions increase, and also there is a stench color change, burning, itching, secretion, there could be a bacterial infection. Candida albicans infection symptoms include genital itching, burning, genital inflammation, local pain, cream cheese or tofu smell of secretions. If not treated, they may affect fetal development as concerns important organs. Repeated attacks may lead to rupture of membranes. In late pregnancy it may also lead to premature delivery, intrauterine infection, umbilical cord prolapse, which would endanger fetal life safety. Many normal colonies already exist in the vagina, the vagina is a partially acid environment. During pregnancy vaginal acid degree will be affected, as the amount of harmful bacteria will increase and cause infection. (Oyeyemi, Fadipe & Oyeyemi 2015.)

Uterus presses the bladder, so they may appear frequent urination urgency phenomenon. This is very common to a pregnant woman. (Schneeberger, Geerlings, Middleton & Crowther 2015.)

But easily confused with urinary tract infection. First of all, the bladder pressure leads to urinary tract change. Under the condition of vaginal secretions increase there are more likely to appear urinary tract infections. Secondly, based on the female physiological structure, urethra is short, and urethral opening closer to the anus. This makes women themselves compared to men more likely to suffer from urinary tract infection. Some physiological changes will happen to the pregnant women. With placenta formation, and secreting a lot of estrogen and progesterone, makes a sensitive bladder tension abate, and therefore easy to urinate, and the bladder easy to breed bacteria. Thirdly, with the increase of the uterus oppression to fallopian tube and left fallopian tube are part of urine retention, and also provides convenient conditions for bacteria breeding. Because the amounts of amino acids and water-soluble vitamins and other nutrients in the urine during pregnancy are relatively higher, it is more conducive to bacterial breeding. Fourth, pregnancy health neglected, the vaginal cleanness ignored, it is susceptible to bacteria, there is greater risk to cause urinary infection. (Szweda & Jozwik 2016.)

Intrauterine infection refers to prenatal or intrapartum infection of the placenta, fetal membrane and amniotic fluid or the premature rupture of membranes, infection caused by the bacteria from vagina or cervix ending up into the uterus. It can lead to severe pregnant women and fetal infection, causing neonatal pneumonia, sepsis and meningitis. If pregnant women are inclined to vaginal delivery, they have a lower risk of postpartum infections. If for cesarean delivery, they can develop postpartum endometritis, pelvic peritonitis, thrombosis phlebitis, sepsis, and even death. Common pathogens of intrauterine infection are anaerobic bacteria, escherichia coli, staphylococcus aureus, pneumococcus, enterococcus. Herpes simplex virus, cytomegalovirus, and toxoplasma can also cause intrauterine infection. (Huang, Cham, Eppes, Gerber, Reed & Ernst 2014.) Premature rupture of membranes causes lower genital tract bacteria infection. It is closely related to the rupture in time. Late pregnancy intercourse is also a cause of intrauterine infection. Pregnant women with vaginitis, cervicitis, although membranes are complete, but weaker, can also be susceptible to intrauterine infection. Therefore, as nurses we need to give effective health education and nursing measures to patients. (Stock, Patey & Thilaganathan.)

5.2 What are nursing interventions to prevent serious infections in pregnant patients?

In early pregnancy, pregnant women will have symptoms of urinary frequency. It is caused by the uterus oppressing on the bladder. As nurses, we need to tell pregnant women to be careful if it is accompanied by pain, heat, and urgency at the same time. This is likely to be of urinary tract infection. Antibiotic treatment is the main treatment when the pregnant woman appears to have serious urinary tract infections. But it must be used under the guidance of physician. (Schneeberger, Geerlings, Middleton & Crowther 2015.) If used by oneself, it may aggravate, even turn into pyelonephritis. So pregnant women should pay attention to hygiene, frequently wash underpants and bathe. After sexual intercourse, the woman has the best alternative to urinate in order to rule out again the bacteria in the urethra. Tell the pregnant women do not to have sex within one month before the due date of childbirth.

If infected with pyelonephritis the pregnant woman should be hospitalized and be under monitoring of uterine contraction and the status of fetus. Avoid fatigue, lack of sleep during preg-

nancy, malnutrition, spirit is depressed. Tell a pregnant woman to maintain good physical condition. Underwear are to be changed frequently, keeping perineum dry. Avoid the stain near the anus into the vagina, and perform daily cleaning of the vulva. Choose nutritious and easy digested food. Eat more vegetables, especially one needs to drink more water. Because of the physiological changes during pregnancy, it is easy to make urine flow. Keep drinking enough water consuming, thus increasing the flow of urine, "flushing" the urethra, it is not easy to make bacteria trapped within the urinary tract. (Vazquez & Villar 2011.)

During the gestation period, uterus enlarges the oppression on both sides of ureter in the supine position which makes the urine stay and the ureter be prone to be infected. Tell pregnant women to take a lateral position, especially in the left side one can remove the uterus oppression of ureter. It is not only conducive to urine flow, prevention of urinary tract infection, but also beneficial to increase fetal blood supply. First three months after pregnancy and one month before the due date the pregnant mother should not be having sex. The former easily causes abortion, while the latter is easy to induce premature rupture of membranes and pre-term delivery. At the other stages of pregnancy one should greatly reduce the number of sex. Sex is easy to be cause bacteria and cystitis in the bladder or urethra and in the urinary tract.

(Gupta & Bowman 2016.) Especially in case the pregnant woman has a history of urinary tract infection she had better avoid sex during pregnancy. (Fadipe & Oyeyemi 2015.)

In case of intrauterine infection of pregnant women there appear fever and axillary temperature is higher than 37.5 °C. The pulse of pregnant women increases quickly and they also have increased WBC count. Severe patients can develop toxic shock. If the patient was diagnosed with intrauterine infection she should be given antibiotics. If the patient has only mild symptoms and vaginal delivery quickly, symptoms can disappear in postpartum. Stage if there is a diagnosis of intrauterine infection, childbirth may occur in the short term. So the vaginal delivery is the best solution. So to prevent intrauterine infection there is a need to rectify anemia, malnutrition, chronic diseases and decrease the maternal immune system disease. There should be timely treatment of pregnancy with infectious diseases, such as colpitis, cervicitis (including chlamydia infection). Vaccination is one of the most effective strategies to prevent the serious infection diseases. It's very important to tell the patient the benefits and the risks of vaccines. (Zain, Shavell & Gonik 2015.)

6 DISCUSSION

After I read the information, I think we still need to continuously improve nursing skills at some stage in order to give the patients the best nursing care. So I will focus on the high quality prevention measures of serious infection during pregnancy. As we all know, in Finland we have the high quality of water and air. So it's reducing the infection rate. But we should know about in other countries. Our nursing measures should not only focus on Finland. According to the different religions in other counties we need know more about culture as a nurse.

What's more, it is possible to develop noninvasive diagnostic tests for infection among pregnant women and studies of therapies to improve the prevention of serious infections. I think the aim of the study is to make this work into our clinical practice in the future.

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