



ISSN: 2230-9926

Available online at <http://www.journalijdr.com>

IJDR

International Journal of Development Research

Vol. 12, Issue, 11, pp. 60294-60298, November, 2022

<https://doi.org/10.37118/ijdr.25785.11.2022>



RESEARCH ARTICLE

OPEN ACCESS

NURSING CARE TO PREGNANT WOMEN WITH URINARY INFECTION DURING PRENATAL CARE

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ARTICLE INFO

Article History:

Received 29th August, 2022
Received in revised form
12th September, 2022
Accepted 29th October, 2022
Published online 30th November, 2022

KeyWords:

Nurse, Pregnancy, Urinary infection, Prenatal.

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ABSTRACT

The gestational period is composed of several psychological and physiological changes, and to ensure the birth of a healthy baby, it is necessary to adopt measures during the prenatal period that prevent, especially, the appearance of infections that can lead to premature birth or a low-birth-weight newborn. The aim of the study was to gather scientific evidence on the nurse's actions in the prevention and early diagnosis of urinary infections during pregnancy. The research was characterized as an integrative review of qualitative nature. From the queries made with the descriptors: Pregnant Women; Urinary Tract Infections, making the intersection I- pregnant women AND urinary tract infections, were added to the electronic databases BVS, MEDLINE, LIPECS, LILACS, BDNF and IBECs. A total of 29 articles were found, taking into account the descriptors, time cut, year 2016 to 2021. The main measures for prevention and control of urinary tract infection in pregnant women were adequate intimate hygiene, increased fluid intake, hygiene before and after sexual intercourse, encouragement not to delay voluntary emptying of the bladder and the use of light clothing. The study points out the need for nurses to perform health education actions that demonstrate and teach techniques to reduce urinary tract contamination, such as correct washing of the region and cleaning in the proper direction. In addition, drink filtered water with a minimum of two liters per day. It is the nurse who establishes a relationship of trust with the pregnant woman for the effective realization of the orientation throughout the prenatal consultations and thus ensure that there are changes in behavior.

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Citation: Kassia Rejane dos Santos, David Sodr , Cristiane Barros Galv o, Wildilene Leite Carvalho, Jaiza Sousa Penha, Cynara Silva Lima, Larissa Karla Barros de Alencar et al. "Nursing care to pregnant women with urinary infection during prenatal care", *International Journal of Development Research*, 12, (11), 60294-60298.

INTRODUCTION

The pregnancy period, besides being composed of physiological changes, also has several psychological and social changes, which are experienced differently, taking into account the scenario in which pregnant women live. Pregnant women demand several types of care, including quality care, aiming at the prevention and treatment of possible complications during pregnancy (SILVA, 2013). The goal of prenatal care is to provide healthy gestational development, including preventing the occurrence of infections, so that the birth of the newborn occurs within the expected time, which comprises the period

between the 37th week to the 41st week. The birth that occurs with gestational age from 22 weeks to 36 weeks and 6 days is known as premature birth, which configures as gestational risk situation (BRASIL, 2013). For this, prenatal care should be started early as soon as the pregnancy diagnosis occurs, in order to reduce events that endanger the life of the pregnant woman and the baby (SOUSA, 2014). It is important to have at least six consultations, usually interspersed between the doctor and the nurse. The recommended is to maintain monthly consultations until the 28th week, then biweekly, between the 28th week until the 36th week, ending with weekly consultations from the 36th week until delivery (BRASIL, 2012).

Urinary tract infections (UTI), for example, is one of the main conditions that affect women in the pregnancy cycle, being related to the risk of premature labor (PLT) and low birth weight, being present in 17% to 20% of pregnancies (BRASIL, 2010). The UTI can also occur due to hormonal and anatomical changes that occur during pregnancy (FIORAVANTE, 2015). These infections can lead to gestational complications such as prematurity, low birth weight and fetal death (HEIN, BORTOLI, MASSAFERA 2016). The professional nurse must welcome the pregnant woman, paying attention to data collection (anamnesis), offering qualified listening and assessing vulnerabilities. It is also necessary to articulate with health services to offer continuity of treatment when necessary (BRASIL, 2012). The nurse's attributions during prenatal care are: to guide women and families about the importance of this, breastfeeding and vaccination; perform prenatal consultation of low-risk pregnancy interspersed with the doctor (one consultation with the nurse and the next with the doctor); request additional tests according to the local prenatal protocol; perform rapid tests; identify pregnant women with any alarm signs; develop individual and group educational activities; provide guidance on risk factors, vulnerability and frequency of consultations, among other assignments (BRAZIL, 2012). Urinary infection is considered a common clinical complication in pregnant women, and can be defined as replication or presence of adherence of bacteria in the urinary tract. During pregnancy, there are restrictions on antimicrobial therapy and prophylaxis, considering the toxicity of some antibiotics to the fetus.

care, asymptomatic urinary infections are discovered and treated early (PAGNONCELI; COLACITE; 2016). In addition to requesting the appropriate tests for the gestational period, nurses must know how to interpret them correctly in order to define the correct diagnosis. A study conducted by Masson *et al.*, (2020), states that leukocyturia (presence of leukocytes in the urine) is an important marker for UTI, with the urine culture as the gold standard for diagnosis, and when it is associated with the Abnormal Elements of Sediment (EAS), a broad significance is obtained in the leukocyte count. The aim of this study was to gather scientific evidence on nursing actions for prevention and early diagnosis of urinary tract infections during pregnancy.

METHODOLOGY

The research is characterized as an integrative review of a qualitative nature. This is a type of study that aims to review methods, theories, and empirical studies on a particular topic. This type of review allows the ability to systematize scientific knowledge, making it possible to draw a panorama from other independent studies, to know the evolution of the topic over time and to visualize possible research opportunities. For qualitative studies, one must evaluate the research approach and whether it fits the purpose of the study, together with the evaluation of other aspects of the research (BOTELHO; CUNHA; MACEDO, 2011).

Chart 1. Below shows the descriptor used and the number of articles in the respective databases

DATABASE	SEARCH	STRATEGY QUANTITY
MEDLINE	I- pregnant women AND urinary infections;	7
LIPECS	I- pregnant women AND urinary infections;	1
LILACS	I- pregnant women AND urinary infections;	15
BDENF	I- pregnant women AND urinary infections;	4
IBCS	I- pregnant women AND urinary infections;	2

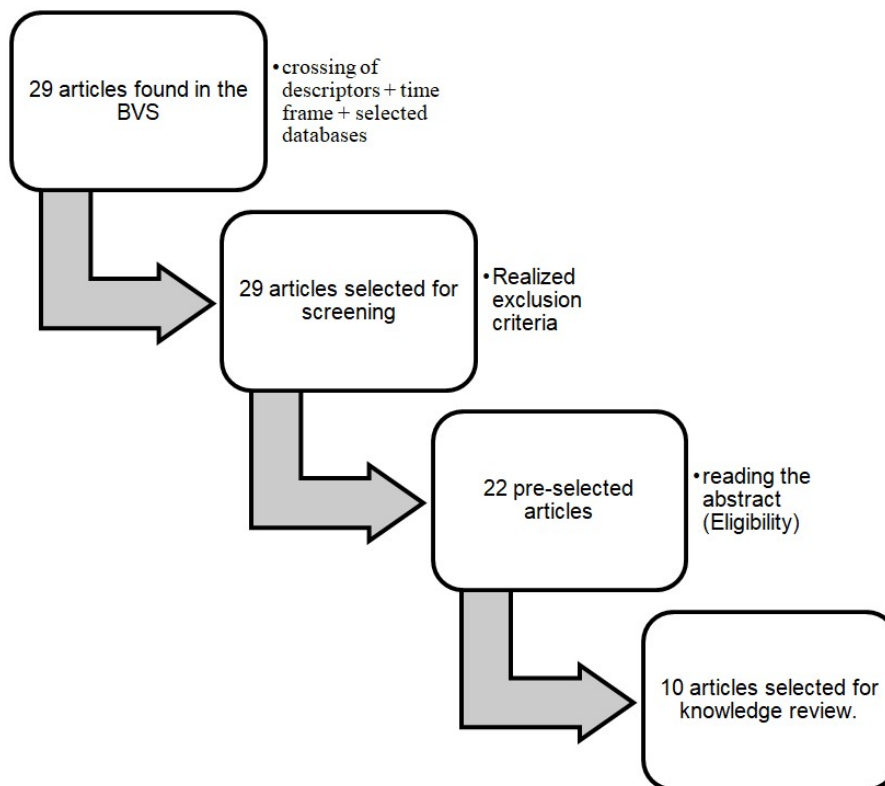


Figure 1. Flowchart of the selection of scientific articles used to compose the integrative review

Knowing the increased risk for the development of UTI during pregnancy, the possibility of asymptomatic bacteriuria and possible maternal and perinatal complications, it is essential to routinely perform urine culture in pregnant women. Thus, urine tests and urine culture are recommended every trimester of pregnancy. With this

Initially, the descriptors were defined: Pregnant Women; Urinary Tract Infections, which are in the DeCS (Descriptors in Health Sciences). Then the cross-referencing was performed: I- pregnant women AND urinary infections. After defining and crossing the descriptor, it was added to the search source Virtual Health Library

(VHL), in the electronic databases Medical Literature Analysis and Retrieval System Online (MEDLINE), Literatura Peruana em Ciências de la Salud (LIPECS), Literatura Latino-Americana e do Caribe em Ciências de la Salud (LILACS), Banco de Dados em Enfermagem - Bibliografia Brasileira (BDENF) and Índice Bibliográfico Español en Ciencias de la Salud (IBECs). Using the search strategy by descriptors and crossing I, a total of 29 articles were found, from the search with the descriptors pregnant women AND urinary tract infections. For the inclusion criteria for the preparation of the study, available and complete studies were added, in English, Spanish, and Portuguese in the period of five years (2016 to 2021), and articles within the theme addressed. After this selection, the articles that were duplicates were excluded and the abstract of the remaining articles was read. The title, abstract, and key words such as pregnancy, urinary infections, and prenatal care were carefully observed, seeking publications appropriate to the theme. From this exclusion, 10 articles remained, which were selected to conduct the research. Data analysis occurred according to the methodology described by Bardin (2011). This follows three steps, namely: pre-analysis, material exploration and treatment of results, inference and interpretation. A table was built with the authors of the articles, title, journal, year of publication and results.

RESULTS AND DISCUSSION

From the queries made with the descriptors: Pregnant Women; Urinary Tract Infections, performing the crossword I- pregnant women AND urinary tract infections, were added to the electronic databases BVS, MEDLINE, LIPECS, LILACS, BDENF and IBECs. A total of 29 articles were found, taking into account the descriptors, time cut, year 2016 to 2021 (Figure 1).

Chart 1. Articles included in the integrative review, showing: year of publication, journal, title, method

Nº	Ano	Revista	Título do artigo	Método
A1	2016	Journal of Nursing and Health	Factors related to urinary tract infection in pregnancy: integrative review	Integrative Review
A2	2015	Escola de enfermagem Aurora de Afonso Costa	Educational technology for the prevention of urinary tract infection in pregnancy: a descriptive study	Descriptive study
A3	2019	Revista eletrônica trimestral de Enfermagem Global	Quality management in prenatal care: attention to urinary tract infections in a city in the Legal Amazon	Quantitative study
A4	2020	Archivos de Medicina.	Clinical and epidemiological profile of pregnant women with urinary tract infection and asymptomatic bacteriuria consulting a medium complexity hospital in Antioquia (Colombia).	Quasi-experimental design
A5	2016	Scientia Medica	Prevalence and sensitivity profile of bacteria isolated from urine of pregnant women seen at the obstetrics service of a tertiary hospital.	Clinical epidemiological study
A6	2019	Revista chilena de obstetricia e ginecologia	Evaluation of the use of antibiotics in pregnant women with urinary tract infection in a health center	Retrospective study
A7	2019	Universidade de Ciências Médicas Guantánamo	Characterization of pregnant women with urosepsis and antimicrobial resistance of <i>Escherichia coli</i> , Hospital "Dr. Agostinho Neto", Guantánamo.	Retrospective study Descriptive study
A8	2019	Revista Brasileira de Análises Clínicas	Resistance profile, etiology and prevalence of pathogens isolated in urine cultures from pregnant women seen at a clinical analysis laboratory in the city of Veranópolis, Rio Grande do Sul.	Cross-sectional Retrospective
A9	2018	Revista de Ciências Médicas	Prevalence of urinary and genital tract infections in pregnant women assisted in Unidades Básicas de Saúde (Basic Health Units)	Epidemiological Research

Fonte: Autoria Própria.

Due to changes in the systems of the pregnant woman's body, she becomes susceptible to some diseases such as hypertensive diseases, diabetes and infectious processes that can cause various problems to the pregnancy cycle and the fetus, if not previously treated during prenatal care (FIORAVANTE, 2015). One of the main conditions that affect women during pregnancy are urinary infections that can cause gestational complications such as prematurity, low birth weight and also fetal death (HEIN, 2016). Among the factors that must be evaluated, birth weight is of great importance for the health and survival of the newborn and influences its growth and development. This can be considered a factor that in isolation has great importance in neonatal, post-neonatal, and infant mortality (PEDRAZA, 2013). According to the World Health Organization, low birth weight (LBW) is defined as all live births weighing less than 2,500 grams at birth. This problem can trigger increased fetal and neonatal mortality and morbidity, deficits in cognitive development, and increased risk of chronic diseases in adulthood, and may be associated with

morbidities such as asthma and hypertension (BELFORT, 2016). Another risk that can be avoided with proper prenatal care is prematurity. According to the World Health Organization, premature birth is when birth occurs after 20 weeks and before 37 weeks of gestation (WHO, 2016). Among the factors that can increase these risks are lack of prenatal care, poor socioeconomic conditions, low weight of the mother in early pregnancy, smoking, stress during pregnancy and unfavorable reproductive history (BELFORT, 2016). For the author Vera *et al.* (2014), when the pregnant woman has the correct prenatal care, it is possible to reduce the complications caused by urinary tract infections in pregnancy. Because through routine urine tests during prenatal care in asymptomatic pregnant women, it allows the identification and treatment of pregnant women with asymptomatic infections, consequently bringing benefits to pregnant women and newborns.

Urinary infections in pregnancy: By definition, urinary infections are adherences of bacteria on the urinary tract walls, usually caused by bacteria present in the intestinal microbiota that end up reaching the urinary tract and causing contamination. It is the third most clinically frequent during pregnancy, occurring in 17 to 20% of pregnancies, and is associated with serious complications that significantly increase maternal and neonatal morbidity and mortality rates (CALEGARI, 2012). Women go through several physiological and emotional changes during pregnancy, making them more prone to contract urinary tract infections. Urinary tract infection is one of the least serious infections in non-pregnant women, but can be potentially serious in pregnant women. Thus, it is very important that the diagnosis is made early, starting immediately the treatment of symptomatic and asymptomatic urinary tract infections can prevent serious complications (SCHNARR, 2008).

These infections are classified into four groups according to their anatomical location and site of bacterial proliferation: urethritis (urethra), cystitis (bladder) and pyelonephritis (kidneys). The clinical picture varies from asymptomatic bacteriuria that affects 2 to 10% of pregnant women, to pyelonephritis. According to (Nascimento, Oliveira, Araujo, 2012), urinary tract infections have become a relatively common problem during pregnancy, being of great frequency and often a serious problem, its importance is recognized for having controversial themes and becoming a reason for clinical investigation. Therefore, the need for greater importance in the treatment of urinary tract infections in pregnant women has become apparent due to poor prognoses. According to Costa (2013), urinary infections during pregnancy have their clinical diagnosis complicated in view of the fact that some symptoms are difficult to characterize, and during pregnancy some may be present and others not. The characteristic clinical symptoms of UTI are usually dysuria (discomfort, pain when urinating), polyuria (increased frequency and

urgency to urinate), lower abdominal pain, chills, and eventually lower back pain (PAGNONCELLI; COLACITE; 2016). Given this picture, the nurse plays an important role and should know the main complications caused by urinary infection in pregnant women, considering that it is in the prenatal period that the presence of infection can be detected through routine quarterly exams, with the need to monitor the results of interventions until the postpartum period, in order to avoid important repercussions for both mother and baby (COSTA, 2013). In a study conducted in a Clinical Analysis Laboratory (LAC) with 3,232 partial urine tests with uroculture and antibiogram were performed. Of these, 519 presented UTI, mostly women between 19 and 59 years old. Among the positive tests for UTI it was possible to detect the presence of *Escherichia coli* in 324(62.4%) patients, followed by *Proteus sp.* (17.3%), *Klebsiella sp.* (10.4%), *Staphylococci sp.* (8.9%) and *Pseudomonas sp.* (1%) (MACHADO *et al.*, 2019). *Escherichia coli* is responsible for 80% of asymptomatic bacteriuria cases. The screening of asymptomatic bacteriuria in the prenatal routine as well as early treatment is necessary to avoid complications in pregnancy, such as premature delivery and the birth of babies with low birth weight. For this screening is indicated at least two urine tests during prenatal care (FIGUEIRÓ-FILHO, 2009).

Nursing care in front of urinary infection: The professional nurse must welcome the pregnant woman, paying attention to data collection (anamnesis), offering qualified listening and assessing the vulnerabilities. It is also necessary to articulate with health services to offer continuity of treatment when necessary (BRASIL, 2012). According to Berber *et al.* (2011), one of the main precautions that should be taken to prevent complications of UTI in pregnant women is to request urine culture every three months in order to discover the urinary infection at the beginning and treat it immediately. Prenatal care enters as a strategy of prevention and treatment for UTI cases during pregnancy. Thus, it is defined as a set of actions that aims to improve the mortality and morbidity rates of the pregnant woman and the fetus, providing quality of life and health during pregnancy and offering good conditions for the following periods of the pregnancy-puerperal-partum and puerperium cycle. (PEIXOTO.) The nurse performs his functions at all levels of care and playing a role of great importance for the realization in the monitoring of pregnant women and the development of actions aimed at the promotion, prevention and treatment of disorders during pregnancy in the low-risk prenatal period. (SOUZA *et al.*, 2012) The main guidelines that the professional nurse should perform to the pregnant woman with urinary infection include following in maintaining a water intake of at least 2 liters per day, as it increases the amount of urine and prevents bacteria from settling in the bladder wall causing infection, urinate frequently (at least every 2 hours), as this helps in cleaning the bladder and urethra hindering infection, urinate before bed and after sexual intercourse to reduce the entry of bacteria in the bladder. (ALMEIDA *et al.*, 2013). Urinary infection is considered a common clinical complication in pregnant women and can be defined as replication or presence of adherence of bacteria in the urinary tract.

During pregnancy, there are restrictions on antimicrobial therapy and prophylaxis, considering the toxicity of some antibiotics to the fetus. Knowing the increased risk for the development of UTI during pregnancy, the possibility of asymptomatic bacteriuria and possible maternal and perinatal complications, it is essential to routinely perform urine culture in pregnant women. Thus, urine tests and urine culture are recommended every trimester of pregnancy. With this care, asymptomatic urinary infections are discovered and treated early (PAGNONCELLI; COLACITE; 2016). In addition to requesting the appropriate tests for the gestational period, nurses must know how to interpret them correctly in order to define the correct diagnosis. A study conducted by Masson *et al.* (2020), states that leukocyturia (presence of leukocytes in the urine) is an important marker for UTI, with the urine culture as the gold standard for diagnosis, and when it is associated with the Abnormal Elements of Sediment (EAS), a significant leukocyte count is obtained. The ideal time for UTI screening during pregnancy is from the first prenatal visit, considering the repetition of the exam in populations with a higher

risk of urinary infection, in this case, diabetics, with a history of previous infections, tract anomalies (NARCHI; KURDEJAK, 2008). The nurse should request tests according to the Ministry of Health protocol, such as the type I urine test, urine culture and antibiogram. They are able to show the presence of bacteria in the urine and also other signs that help make the diagnosis (BERBEL; GURAL; SCHIRR, 2011). Figueiró-Filho *et al.* (2009) states that to avoid complications, urine culture should be requested for all pregnant women every three months, in order to discover urinary infections and treat them early, avoiding the complications mentioned above. During the nursing consultation, the perceptions and expectations, acceptance of pregnancy, socioeconomic status, obstetric and gynecological history, history of current pregnancy, living habits, health, social and family context of the pregnant woman should be considered in order to prepare her for a healthy and safe pregnancy, delivery and puerperium (BERBEL; GURAL; SCHIRR, 2011). Attention should be paid to antecedents of UTI in childhood, in other pregnancies, or even recurrent infections in pregnant women. In the Nursing History should also be asked about the presence of characteristic symptoms of urinary tract infection such as: itching, vaginal discharge, irritation, fever and dysuria (BERBEL; GURAL; SCHIRR, 2011). According to Melo (2010) it is of fundamental importance in pregnancy the interaction of the patient and the nurse, because this is what will determine the effectiveness of prenatal care.

CONCLUSION

The study points out the need for nurses to perform health education actions that demonstrate and teach techniques to reduce urinary tract contamination, such as correct washing of the region and cleaning in the proper direction. In addition, drink filtered water with a minimum of two liters per day. It is the nurse who establishes a relationship of trust (bond) with the pregnant woman for the effective realization of the guidance throughout the prenatal visits and thus ensure that there are changes in behavior.

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