Nurses' Knowledge and Practice Regarding Care of Neonatal Sepsis in Neonatal Intensive Care Unit, in Omdurman Maternity Hospital, Khartoum State, Sudan (2015)

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B. Sc in Nursing Science,

Upper Nile University, (2006)

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Department of Nursing

Faculty of Applied Medical Science
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Supervision Committee

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

(قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ وَالَّذِينَ لَا يَعْلَمُونَ ۗ إِنَّمَا يَتَذَكَّرُ ْوُلُوُّ الأَلْبَابِ)

صدق الله العظيم

سورة الزمر آية (9)
Dedication

Ideation this work

To the soul of my beloved father and Mother
My kind brothers and sisters
My Family
Who supported and helped me to successfully accomplish, they were very kind with me

Aisha
Acknowledgements

Firstly, my thanks go to the almighty God for giving me the courage for the preparation, writing and assembling of my study in the way I planned.

I thank Gezira University, Faculty of Applied Medical Sciences for the great work they gave to us.

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Nurses’ Knowledge and Practices Regarding Care of Neonatal Sepsis in Neonatal Intensive Care unit, in Omdurman Maternity Hospital, Khartoum State Sudan, 2015

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Abstract

Neonatal sepsis is a significant cause of morbidity and mortality and its considered to be one of the important unsolved problems around the world. A lack of knowledge regarding Neonatal sepsis control among nurses decreases compliance with these practices around the world. A descriptive hospital based study was conducted in Omdurman Maternity Hospital, Khartoum State, Sudan. It aimed at assessing Nurses’ Knowledge and practice regarding care of Neonatal Sepsis in neonatal intensive care unit. The study covered 100 nurses. They constitute the available sample during the study period from (junior – distemper 2015). Data were collected by using a questionnaire designed for the purpose of the study. Data were analyzed using the Statistical Package for Social Science (SPSS). The results showed that 52% of the study sample responded with correct answers regarding definition of neonate sepsis, 60% of them responded correctly regarding types of neonate sepsis, 59% of the study sample responded with correct answers regarding causes of neonate sepsis, 57% of them responded correctly regarding diagnosis of neonate sepsis, 46% of the study sample responded with correct answers regarding Sign s and symptoms of neonate sepsis, 59% of them responded correctly regarding complications of neonate sepsis, 59% of study sample responded with correct answers regarding prevention of neonate sepsis, 60% of them responded correctly regarding nursing care of neonate sepsis, 53% of the study sample responded with correct answers regarding treatment of neonate sepsis 56% of them responded correctly regarding the daily nurses weighting for baby, 53% of study sample responded with correct answers regarding measuring of vital signs according to policy of hospital, 38% of them responded correctly regarding importance of hands washing before any nursing intervention, 58% of study sample responded with correct answers regarding agreed warming baby, 60% of them responded correctly regarding measuring of daily fluid in-output, 61% of study sample responded with correct answers regarding the check place of nose gastric tube before feeding, 62% of them correctly regarding importance hands washing after any nursing intervention. The study concluded that the nurses’ knowledge regarding care of neonate sepsis was inadequate. The recommendation that knowledge regarding care of neonate sepsis in intensive care unit nurses staff could be improved by providing them with well practical training regarding care of neonate of sepsis must be done, maintain high quality care of neonatal sepsis and more further researches on issues related neonatal sepsis and loge book for nurses to identify the factors that lead to lack knowledge and practice on neonatal sepsis and to maintain neonatal health.
الإنثات الانثائي هو سببًا لما بين أسباب المرضة والوقائع التي تعتبر واحدة من المشاكل التي لم تحل الهامة في جميع أنحاء العالم. فمراجعه فيما يتعلق بالسيطرة إناث الإنجابي بين الممرضات يقل الامتثال لهذه الممارسات في جميع أنحاء العالم. وقد أجريت دراسة وصفية في مستشفى الأم درمان، ولاية الخرطوم، السودان. والتي تهدف إلى تقييم المعرفة والممارسة فيما يتعلق بالرعاية الممرضات حديثي الولادة الإناث في وحدة العناية المركزية لحديثي الولادة. وشملت الدراسة 100 ممرضة. وهي تشكل العينة المتاحة خلال فترة الدراسة من (0) صمغ 2015. وقد تم جمع البيانات distemper (SPSS) وأظهرت النتائج أن 52% من عينة الدراسة وردت مع الإجابات الصحيحة فيما يتعلق بتعريف الإناث حديثي الولادة وردت 60% منهم بشكل صحيح فيما يتعلق بأنواع من الإناث حديثي الولادة و 59% من عينة الدراسة استجاب مع الإجابات الصحيحة بشأن أسباب تغذية الدم حديثي الولادة و 57% منهم أجاب بشكل صحيح فيما يتعلق بتشخيص الإناث حديثي الولادة. و 46% من عينة الدراسة وردت مع الإجابات الصحيحة بشأن تسجيل الصورة وأعراض الإناث الولادي، وردت 59% منهم بشكل صحيح فيما يتعلق بمضاعفات التسمم حديثي الولادة. و 59% من عينة الدراسة وردت مع الإجابات الصحيحة بشأن الوقاية من الإناث حديثي الولادة وردت 60% منهم بشكل صحيح فيما يتعلق بالرعاية التمريضية الالتماس الإناث حديثي الولادة، استجاب 53% من عينة الدراسة مع الإجابات الصحيحة بشأن علاج الإناث حديثي الولادة 65% منهم استجابوا بشكل صحيح بخصوص الممارسات اليومية الترجيح للطفل، وردت 53% من عينة الدراسة مع الإجابات الصحيحة بشأن قياس العلامات الحيوية وفقاً لسياسة المستشفى، و 35% منهم استجابوا بشكل صحيح بخصوص أمراضي الزنوج قبل أي تدخل التمريض، وردت 58% من عينة الدراسة مع الإجابات الصحيحة بشأن الطفل الاحترار المتفق عليه، وردت 60% منهم بشكل صحيح فيما يتعلق قياس في الأذن، و 61% من عينة الدراسة ردد السائل يومياً مع الإجابات الصحيحة بشأن مكان الاختبار من الأذن أنواع المعده بالتقنية 62% و 62% منهم بشكل صحيح فيما يتعلق أذهاني أعراض قراء بعد أي تدخل التمريض، وخلصت الدراسة إلى أن الممارسات بشأن الرعاية من تغذية الدم حديثي الولادة لم تكون كافية التوصية يمكن تحديد المعرفة فيما يتعلق بالرعاية الإناث حديثي الولادة في العناية موطني وحدة الأمراض المكتبة من خلال تزويدهم بالتدريب العملي جيداً بشأن رعاية الوليد تغذية الدم يجب القيام به، والحفاظ على سيارة ذات جودة عالية من الإناث الولادي والمزيد من الأبحاث مزيد حول القضايا المتعلقة الإناث الولادي وكتابة مقصورة للممرضين والممارسات لتقييد العوامل التي تؤدي إلى نقص المعرفة والممارسة على الإناث الولادي والحفاظ على صحة الأطفال حديثي الولادة.
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<td>ABHR</td>
<td>Use Alcohol–Based Hand Rub</td>
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<td>Active Antimicrobial Proteins</td>
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<td>BMC</td>
<td>Bugando Medical Centre</td>
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<td>CX-rays</td>
<td>Chest x-ray</td>
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<td>E.coli</td>
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<td>GA</td>
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<td>GA</td>
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<td>Global Neonatal Mortality</td>
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<td>IFN-γ</td>
<td>Interferon –Gamma</td>
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<td>Ig</td>
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<td>IMR</td>
<td>Infant Mortality Rate</td>
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<td>IV</td>
<td>Intravenous</td>
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<td>LBWT</td>
<td>Low Birth-Weight</td>
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<td>MCH</td>
<td>Maternal and Child Health</td>
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<td>MMR</td>
<td>Maternal Mortality Rate</td>
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<td>MRSA</td>
<td>Methicillin Resistant Staphylococcus</td>
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<td>NICU</td>
<td>Neonatal Intensive Care Unit</td>
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<td>UTI</td>
<td>Urinary Tract Infection</td>
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<td>WBC</td>
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<td>WHO</td>
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1. INTRODUCTION

1-1 Background

Neonatal sepsis, or Primary Infection of the Bloodstream (BSI) is a clinical syndrome characterized by a systemic inflammatory response, with or without evidence of a suspected or confirmed infection. It is one of the more frequent infectious pictures in the neonatal period, and is the one which most raises morbidity and mortality. Introduction of new and potent antimicrobial agents for These neonatal deaths are attributed principally to infection, birth asphyxia and consequences of premature birth and low birth weight. It is well known that risk factors related to neonatal bacterial sepsis are complex; they include interaction of maternal-fetal colonization, transplacental immunity and physical and cellular defended mechanisms of the neonate, the incidence of neonatal bacterial sepsis may vary deferent from country to country as well as within the same country. In, neonatal mortality results from all expected causes of neonatal sepsis, consequently neonatal mortality is acquired just before or during delivery with vertical transmission of the microorganisms, from mother to newborn infant, and postpartum infection, since bacteria may be acquired from the delivery room or in the newborn nursery via the main pathways, namely the respiratory and gastrointestinal tracts. After birth, the skin and umbilical cord become an important alternative route for the entrance of bacteria into the systematic circulation. The umbilical stump is a frequent site for coetaneous infection leading to septicemia (Zaidi, et al 2009), there are associations between prematurity and neonatal sepsis that increase the risk for premature infants. Preterm infants are more likely to require invasive procedures, such as umbilical catheterization and intubation, to reduce your infant’s chance of getting neonatal sepsis, the antibiotics can control dangerous bacteria in the mother. It will prevent the spread of bacteria during pregnancy to birth (Levy et al 2008)
1.2 Problem Statement

Worldwide: Incidence of Neonatal sepsis is a significant cause of morbidity and mortality of hospitalized newborns and premature infants, sepsis accounts for 15% of neonatal deaths (Unicef, 2015). In the United States sepsis is still the seventh lead cause of neonatal death (Centers for Disease Control and Prevention, 2013) the Centers for Disease Control and Prevention (CDC) estimates that one in every 141 babies born in the United States each year dies of infection in the first year of life, with approximately 20,000 deaths in the neonatal period (2010) the incidence of neonatal SEPSIS is higher for infants with lower gestational age, with premature infants having a three to five times greater risk of developing sepsis, although the incidence of sepsis is relatively low, the associated morbidity and mortality is high. in the United States, 1 to 5 of every 1000 live births results in neonatal sepsis (WHO 2010)

In developed countries: the global economic estimate, SEPSIS still cause of life threading in the world an estimated 1.6 million neonatal deaths annually, representing 40% of all neonatal deaths. About 12% of children are born prematurely worldwide, including about 2% of VLBW. Together, prematurity and neonatal sepsis account for the greatest burden of neonatal deaths overall. The limited access to medical resources combined with geographical comorbidities (e.g., severe malnutrition) can lead to mortality from neonatal sepsis remaining unacceptably high in developing countries (WHO 2010)

In developing countries: Neonatal infections currently cause about 1.6 million deaths annually in developing countries. Sepsis is the commonest cause of neonatal mortality; it is responsible for about 30–50% of the total neonatal deaths. It is estimated that up to 20% of neonates develop sepsis and approximately 1% die of sepsis-related causes neonatal morbidity and mortality remains very high in the. According to World Health Organization (WHO) estimates, there are about 5 million neonatal deaths a year, (WHO, 2013) developing countries sub-Saharan Africa, Asia and Latin America. one of the important contributors to these neonatal deaths (Zaman et al 2008).

In Sudan: Sudan is classified as having made insufficient progress to achieve. The current infant mortality rate is 60 per 1,000 live births and the under-five mortality rate is 82 deaths per 1,000 live births. The neonatal mortality rate is also high ranging from 34 to 47 per 1,000 births. (Zaman et al 2008)
1.3 Justification:
The neonatal sepsis is life threaten disease in the worldwide, spread in Africa, it has high motility and morbidity rate for infant, to reduce incident rate shod be safe care provide to sepsis, and early detection methods such as, increase awareness, immunization, and good nursing care, this play important role in reduction sepsis from new born and reduce death, and avoid the life, threatening condition that continuous to affect at risk newborn, this is primary prevention strategies because they play a vital role in community education and health care services, and enhance to conduct this research on nurses', the aim of this research to limited about pathological sepsis in Sudan, this emphasize on the urgent need to understand the knowledge of nurse about newborn illnesses and prompt recognition of sepsis and immediate treatment is essential in averting complications and death due to neonatal sepsis
1.4 Objectives

1.4.1 General Objective
To study Nurses’ Knowledge and Practices Regarding Care of Neonatal Sepsis in Neonatal Intensive Care unit, in Omdurman Maternity Hospital, Khartoum State Sudan, during the period from 2014 to 2015.

1.4.2 Specific Objectives
1. To assess the level of Knowledge and Practice of staff nurses regarding neonatal sepsis
2. To identify neonatal sepsis prevention and guidelines as necessary measures in reducing neonatal sepsis
3. To provide nurses with an update of evidence-based neonatal sepsis care measure
2. Literature review

2.1 Introduction.

Neonatal sepsis is a common and life-threatening disorder, particularly among preterm infants, neonatal sepsis may be categorized as early-onset and late-onset, of newborns. With early-onset sepsis, 85% present within 24 hours, 5% present at 24-48 hours, and a smaller percentage present within 48-72 hours, onset is most rapid in premature neonates. Early-onset sepsis is associated with acquisition of microorganisms from the mother, transplacental infection or an ascending infection from the cervix may be caused by organisms that colonize the mother’s genitourinary tract the neonate acquires, the microorganisms as it passes through the colonized birth canal at delivery neonatal sepsis, is a treatable condition if the condition is recognized early, if the neonate is treated aggressively with antibiotics, and if he or she receives good supportive care. their attitude to the condition and treatment preferences for the condition. (Schrag et al, 2008), all this emphasize on the urgent need to understand knowledge of mothers on newborn illnesses, and their care-seeking behavior for the sick neonate since prompt recognition of septicemia and immediate treatment is essential in averting complications and death due to neonatal sepsis.

Neonate can be defined as a newborn, regardless of gestational age (GA) or birth weight, which has a greater-than-average chance of morbidity or mortality, requiring early intervention that should be delivered at neonatal intensive care unit (NICU). It provides care to full spectrum of newborns ranging from extremely premature infants, to high risk and critically ill babies, to less critically ill babies who are recovering and maturing with increased emphasis is being placed on the need for standards of care, as well as mechanisms which address the barriers to provision and use of quality care.

The first step in improving quality of nursing care, is an articulation of standards of care that provide a mean for determining quality of care as well as accountability of the nurses a standard, is defined as a professionally agreed level of performance, it provides the required knowledge and skills that can be used to orient new staff and to guide nurses in clinical practice (Zaidi et al. 2009).

2.2 Definition of Neonatal sepsis

Neonatal sepsis is a blood infection that occurs in an infant younger than one week and before 3 months of age, old. Early-onset sepsis is seen in the first week of life. Late-onset sepsis occurs after 1 week and before 3 months of age (Biran, et al 2009)
2.3 types of Neonatal Sepsis:

2.3.1 Early-onset of Sepsis
Onset of sepsis and most often appears in the first 24 hours of life. The infection is often acquired from the mother. This can be caused by a bacteria or infection acquired by the mother during her pregnancy, a Preterm delivery, Rupture of membranes (placenta tissue) that lasts longer than 24 hours, Infection of the placenta tissues and amniotic fluid and frequent vaginal examinations during labor. (Weile J et al 2009).

2.3.2 Late-onset of Sepsis
The second type or the Late-onset Sepsis is acquired after delivery. This can be caused by contaminated hospital equipment, exposure to medicines that lead to antibiotic resistance, having a catheter in a blood vessel for a long time, staying in the hospital for an extended period of time (Martines et al.2009).

2.4 Causes of Neonatal sepsis
Neonatal sepsis can be caused by bacteria such as Escherichia coli (E.coli), Listeria, and some strains of streptococcus, the herpes virus can also cause a severe infection in a newborn baby, early-onset neonatal sepsis most often appears within 24 hours of birth. The baby gets the infection from the mother before or during delivery. The following increases an infant's risk of early-onset sepsis: Group B streptococcus infection during pregnancy and preterm delivery. Water breaking (rupture of membranes) longer than 24 hours before birth infection of the placenta tissues and amniotic fluid. Babies with late-onset neonatal sepsis get infected after delivery. The following increase an infant's risk of sepsis after delivery. Having a catheter in a blood vessel for a long time.

Neonatal sepsis is caused by bacteria. The infant may come in contact with bacteria during pregnancy, birth, or from the environment after birth. Early-onset sepsis is caused by an infection from the mother. It may pass to the infant from the placenta or birth canal during birth. antibiotics may be given to high risk mothers during labor. this may prevent early-onset bacterial sepsis in some infants (Zaman et al 2008).

2.5 Risk Factors of Neonatal sepsis:-
Infant boys have a higher risk for neonatal sepsis, other factors that may increase your infant’s chance of neonatal sepsis include:

- Premature birth—more than 3 weeks before due date
- Early labor—more than 3 weeks before your due date
• Fetal distress before birth
• Infant has a very low birth weight
• Fetus has a bowel movement before birth and fetal stool is in the uterus (Delanghe, et al 2015).

2.6 Signs and symptoms of Neonatal sepsis

Infants with neonatal sepsis may have the following symptoms:-
(Fever or frequent changes in Body temperature)

- Breathing problems (Breathing rapidly, difficulty breathing, or periods of no breathing) (apnea)
  - Diarrhea
  - Low blood sugar
  - Reduced movements
  - Reduced sucking
  - Seizures
  - Slow heart rate
  - Swollen belly area
  - Vomiting
  - Yellowish skin
  - Poor feeding from breast or bottle
  - Skin rashes
  - Bloated abdomen
  - Vomiting yellowish material
  - Difficulty sleepiness
  - Jaundiced or overly pale skin
  - Bruising or bleeding
  - Cool, clammy skin (Demicheli et al 2013)

2.7 Diagnosis of Neonatal sepsis

Diagnose, and treat neonates with sepsis are needed in both low, and high-income settings. The doctor will ask about infant’s symptoms and medical history. Physical exam will be done, tests may include the following:

- Blood tests
- C-reactive protein
- Complete blood count (CBC)
• Blood and urine cultures
• Lumbar puncture to evaluate cerebrospinal fluid that protects the brain and spinal cord
• Samples of skin lesions
• Chest and/or abdominal X-rays (A chest x-ray will be done if the baby has a cough or problems breathing) Death (Demicheli, et al 2013)

2.8 Pathophysiology of Neonatal sepsis
Distal risk factors for neonatal sepsis include poverty and poor environmental conditions, proximate factors include prolonged rupture of membranes, preterm labour, maternal pyrexia, unhygienic intrapartum and postnatal care, low birth weight, and prelacteal feeding of contaminated foods and fluids, the bacteria that cause neonatal sepsis are acquired shortly before, during, and after delivery, they can be obtained directly from mother's blood, skin, or vaginal tract before or during delivery or from the environment during and after delivery, Streptococcus (Group B streptococcus, GBS) is the most common cause of neonatal sepsis, in many countries, though low rates are reported from many low income countries, especially those in south Asia gram-negative bacilli (Escherichia coli, Klebsiella spp., Pseudomonas spp., Acinetobacter spp.) and gram-positive (such as Staphylococcus aureus and Staphylococcus epidermidis, are other important causes, however, there are many difficulties in interpreting aetiological neonatal sepsis data, because many studies report selected populations of high-risk infants, specimens from infants in the first 24 hours of life are also seriously under-represented, especially those from low birthweight babies, and babies born outside health facilities, intrapartum antibiotic prophylaxis against S. agalactiae has also led to a substantial change in the bacteria responsible for early onset neonatal sepsis; gram-negative bacilli, and Staphylococcus predominate in countries implementing these programs there are also many other important neonatal infectious disease pathogens that are not associated with the sepsis syndrome including, Treponema pallidum, rubella virus, herpes simplex virus, cytomegalovirus, toxoplasmosis, Clostridium tetani, HIV, hepatitis B virus, and Bordetella pertussis, these infectious pathogens cause serious morbidities in young infants and multifaceted disease syndromes including congenital anomalies, developmental disabilities, chronic liver disease, neonatal tetanus, and apnea, they are
also important causes of morbidity and mortality in older age groups, this paper (Chowdhury, et al 2008)

2.9 Neonatal Immunity

Neonates have a functionally immature immune system. They have extremely low immunoglobulin (Ig) levels except for IgG to specific maternal antigens transferred passively across the placenta during the last trimester of pregnancy, Innate immunity of the newborn. T cell function is relatively unimpaired but complement activity is half that of healthy adults. neonates have a low neutrophil storage pool, and their existing neutrophils have impaired capacity to migrate from the blood to sites of infection , the basal expression of toll-like receptors (TLRs,) receptors that detect the presence of microbes) is similar in the neonate and adult . However, innate immune responses of neonatal mononuclear cells are characterized by markedly reduced release of the proinflammatory -polarizing cytokines tumour necrosis factor-alpha (TNF-α) and interferon-gamma (IFN-γ) with relative preservation of anti-inflammatory such as interleukin These findings may reflect in utero requirements, including the avoidance of harmful inflammatory immune reactions. These immunological problems are reflected in the clinical presentation of neonatal sepsis. Neonates have a rapid and fulminant progression of septicaemic disease, nonspecific clinical signs of infection, and difficult-to-interpret laboratory results including haematological and immunological biomarkers of infection and inflammation. Low birth-weight (LBWT) (preterm and small for gestational age) infants have even poorer functional immunity, and are especially at risk of sepsis. However, neonates do have well-functioning cationic membrane-active antimicrobial proteins and peptides (APPs) which have microbicidal properties. These APPs can be found in the vernix caseosa covering the skin at birth, and in the neonatal gastrointestinal and respiratory tracts (Steinbach, et al 2013)

2.10 Treatment of Neonatal sepsis

Neonatal sepsis is a treatable condition if the condition is recognized early, if the neonate is treated aggressively with antibiotics, and if he or she receives good supportive care, even only good supportive care alone can contribute greatly in saving most cases of neonatal sepsis babies younger than 4 weeks old who have fever or other signs infection are started on intravenous (IV) antibiotics right away,It may take 24 to 72 hours to get lab results, the baby will get antibiotics for up to 3 weeks if
bacteria are found in the blood or spinal fluid, treatment will be shorter if no bacteria are found, (Sachdev, et al ,2009)

2.10 .1 IV Fluids
IV fluids will help support your infant until the infection clears. It may include fluids, glucose, and electrolytes.

2.10.2 Oxygen
Your infant may need oxygen therapy. In more severe cases, a ventilator may be used to support breathing.

2.11 Prevention of Neonatal sepsis
To reduce your infant’s chance of getting neonatal sepsis, your doctor may take the following steps:
Antibiotics can control dangerous bacteria in the mother. It will prevent the spread of bacteria during pregnancy or birth, your doctor may recommend antibiotics if: The birth mother has previously given birth to an infant with neonatal sepsis. You have had a positive bacterial infection test before your due date. Breastfeeding may also help prevent sepsis in some infants. Follow steps to prevent premature labor or birth. This can include proper prenatal care, avoiding drugs and alcohol, and eating a healthy balanced diet.
An antiviral medication called acyclovir will be used for infections that may be caused by the herpes virus, older babies who have normal lab results, and have only a fever may not be given antibiotics. Instead, the child may be able to leave the hospital and come back for checkups. Babies who need treatment and have already gone home after birth will be admitted to the hospital for flow up monitoring ( Haider BA, et al, 2014)

2.11.1 Advances in Prevention
2.11.2 Before Delivery:
Many older studies have demonstrated that improving maternal health and nutrition before delivery, is directly associated with improved neonatal health outcomes. Randomized controlled trials (RCTs) of maternal protein-calorie, and multiple micronutrient and supplementation have demonstrated significant improvements in rates of prematurity and birth weight and variable impact on mortality but no studies have examined their impact on rates of neonatal sepsis. Maternal immunization is an important method of providing neonates with appropriate antibodies as soon as they are born, this approach is less sensitive to obstacles in accessing, the health care
system than are other approaches, and examples of successful interventions include maternal tetanus toxoid and influenza immunizations. Studies of maternal immunization with S. agalactiae type III conjugate vaccine have demonstrated excellent placental transfer and persistence of protective levels in 2-month-old infants. Phase I and II trials of other serotypes in non-pregnant women have also demonstrated safety and immunogenicity.

A recent modelling study estimated that vaccination with S. agalactiae vaccine would prevent 4% of US preterm births and 60%–70% of neonatal S. agalactiae infections. Encouraging results are also emerging from studies of maternal immunization with pneumococcal polysaccharide and conjugate vaccines; the vaccines all have excellent safety profiles, however, barriers to maternal immunization include, liability issues for vaccine manufacturers in developed countries, education of the public and health care providers regarding the benefits of maternal immunization; and poor ascertainment of data from low-income countries (Baker, et al., 2010).

2.11.3 During Labor and Delivery:

There is strong evidence that clean delivery practices and hand washing during delivery reduces rates of neonatal sepsis in both home and health facility settings. Interventions to improve hand washing rates, have been remarkably successful in research settings, the reasons for lack of successful scale-up of hand washing interventions into policy, programs, and behavior change are less clear, new studies from Malawi and Nepal indicate that maternal antisepsis interventions such as vaginal chlorhexidine during labour may have a significant impact on rates of neonatal mortality and sepsis in developing countries. However, other studies from high-income countries have demonstrated little effect on rates of HIV or neonatal infections (Baker, et al., 2010).

Intrapartum antibiotic prophylaxis has been highly effective in reducing both early-onset neonatal bacterial and maternal sepsis in developed countries. (Baker, et al, 2010)

2.11.4 After Delivery:

There is also strong evidence that hand washing by health care providers after delivery can reduce neonatal sepsis and infection rates, especially in hospitals. There is less evidence for the importance of rigorous hand washing and use of antiseptics in mothers of their own infants.
In high-income settings, studies have not shown an advantage of antibiotics or antiseptics over simply keeping the umbilical cord clean. However, umbilical stump chlorhexidine cleansing has recently been shown to substantially reduce neonatal deaths in Nepal.

Other studies investigating the effects of chlorhexidine on prevention of omphalitis are currently underway in several countries, there is emerging evidence that neonatal skin antisepsis preparations such as sunflower seed oil provides cheap, safe, and effective protection against nosocomial infections in hospitalized preterm neonates and infants in studies in south Asia. Application of chlorhexidine to neonatal skin has also been shown to be effective in reducing neonatal sepsis in studies from south Asia, neonatal immunisation has long been considered an important method of reducing neonatal infections. However, response varies according to the antigen. BCG, polio, and hepatitis B vaccines are highly immunogenic when given at birth. However, maternal antibodies interfere with a neonate's response to measles vaccine when administered under six months. Protein antigen vaccines (e.g., pertussis and tetanus toxoid) given at birth have been shown to produce poor responses compared to the same antigen given at two months of age and are associated with later tolerance. Studies also indicate that S. agalactiae and Streptococcus pneumoniae vaccines are both likely to be ineffective when given in the neonatal period, breastmilk contains secretory IgA, lysozymes, white blood cells, and lactoferrin and has been shown to encourage the growth of healthy lactobacilli and reduce the growth of E. coli and other gram-negative pathogenic bacteria. That focused on increasing early initiation and exclusive breastfeeding rates demonstrated significant reductions in diarrhea and acute respiratory infections in neonates and older infants in India. Other observational studies have demonstrated impact on infection specific mortality rates and all-cause mortality during the neonatal period, neonatal micronutrient supplementation trials have focused on vitamin A supplementation, older studies have shown significant reductions in respiratory disease in low birth-weight infants after the administration of parenteral vitamin A. More recently, trials of newborn vitamin A supplementation have shown encouraging reductions in neonatal mortality, in high-income countries, clinical trials of immune stimulants such as granulocyte/monocyte colony stimulating factor to enhance the quantity and quality of neonatal neutrophils and monocytes appear promising but have not yet shown a significant clinical benefit, the evaluation of recombinant APPs as adjunctive therapy for neonatal infection are still under
evaluation. The impact of TLR agonists to improve defenses against microorganisms are also being evaluated (Jordan, et al 2008)

2.12 Nursing care of neonatal sepses
The neonatal nurses role is vital for the successful implementation of developmental care and the provision of optimal neonatal intensive care unit (NICU) environment, in emotional support of parents (Durso et al, 2009)

Assess respiratory rate, depth, and quality
Elevate affected extremities with edema
Assess respiratory rate, depth, and quality
Warm baby slowly
Frequent monitoring of skin temperature
Warming IV fluids
Treat accompanying hypoglycemia.
Routine screening for all at risk infants
Early feedings
Maximize exposure of the skin surface to the light
Periodic assessment of serum bilirubin levels
Protect the newborn’s eyes with patches
Measure irradiance levels with a photometer
Good skin care and reposition infant at least every 2 hours and adequate hydration

Skin should be kept clean with warm water with or without mild soap
Daily washing has been shown to add no value in infection control. However soiled areas showed be cleaned gently but avoid damage to the skin.

Adhesive tapes that damage neonate’s skin should be avoideThe only time whole body bathing and antiseptic soaps are indicated is during an infection outbreak

- Wash hands with water and antiseptic soap when visibly soiled or contaminated.
- If hands are not visibly soiled, use alcohol-based hand rub (ABHR)
- Decontaminate hands before and after each patient.
- Decontaminate hands after contact with inanimate object in the immediate vicinity of the patient
Assessment of neonatal sepsis
irritability
breathing problems
weakness
skin temperature changes
diarrhea
reduced sucking
seizures
edema
vomiting
ratehrart rate
body sugar
WBC eleved
yellowish skin (jaundice)
dry skin /membranes
presence of tachycardia above 160 bpm or weak pulse
Decreased body temperature changes temp above 36c
Decreased skine turgor
Inadeguate urine output or  Increase urine out patients ( Durso et al, 2009)

2.13 Infection in the placenta
Group B strep infection
Given birth in the past to a baby with sepsis caused by bacteria
Other things that can help prevent sepsis include:
Preventing and treating infections in mothers, including herpes infection
Providing a clean place for birth
Delivering the baby within 24 hours of when the membranes break n the neonatal gastrointestinal and respiratory tracts ( Kramer 2009)

2.14 Prognosis
Many babies with bacterial infections will recover completely, and have no other problems. however, neonatal sepsis is a leading cause of infant death. The more quickly an infant gets treatment, the better the outcome ,complications, disability, death( Kramer, 2009)
2.15 Previous studies

A study (1) It was conducted in the neonatal units at El-Minia University and General Hospitals. The study group was a convenient sample of 40 nurses, 22 nurses from El-Minia University and 18 nurses from El-Minia General Hospitals. Educational program for nurses’ were done through using the following data collection tool: 1- Pre-designed questionnaire sheet, 2- Observation checklists sheet and 3- Educational and training program.

Results of this study showed significant progress in nurses' knowledge and practices in neonatal sepsis post/test. Concluded that, by the implementation of the program there was remarkable improvement of nurses' knowledge and practices, it was clear in post-test results. Recommended a developed program should be applied and repeat again every 6 months in the same study setting and adopted in other similar settings with required modifications, provision of continuing education programs. educational program for Nurses' Related to Infection Control of Invasive Procedures in Neonatal Units at EL-Minia University and General Hospitals (Abolwafa, et al 2013)

A study (2) This study has a descriptive and cross-sectional design that conducted in neonatal wards and neonatal intensive care units (NICU) affiliated to Tabriz teaching hospitals in 2013. The study sample consisted of 150 employed nurses in selected settings during the study. All of them were invited to participate in the study via census sampling method. Inclusion criteria were included: willingness to participate in the study, and having at least 3 months' work experience in neonatal units or NICUs. The exclusion criteria were included: did not respond to 10% of questions in the questionnaire. (Asadollahi et al 2015) Results All nurses (100%) were female. The degree of 95.5% of participants was baccalaureate in nursing and 4.5% of them had a master of sciences (MS) degree in neonatal intensive care. Among participants, 61.1% of them were employed in NICU and 89.3% (134 nurses) were working in rotation shifts and 10.7% (16 nurses) of them were working in fixed shifts. Also, 15.9% of participants were not participated in previous continuing education regarding neonatal sepsis. In addition, among educated nurses, 55.5% participated in 1 to 3 previous educational courses, 20% of them participated in 3 to 5 previous educational courses. Furthermore, 68% of participants reported a need for continuing
education basic concepts about neonatal sepsis So, infection control committees in health centers should increase the knowledge of nurses in intensive care unit, also more experienced nurses should be employed in neonatal units, also, there is a need for improvement in nurses’ attitude especially in the field of patient safety). (Asadollahi et al, 2015).
3. Materials and Methods

3.1: Study design
This descriptive hospital based study was conducted in Omdurman Maternity hospital aimed at assessing Nurses' Knowledge and Attitude regarding Care of Neonate with Sepsis in Omdurman Maternity Hospital, Khartoum State, Sudan during the period from (October to December 2014).

3.2: Study area

Omdurman Maternity Hospital is the first specialized maternity hospital in Africa. At inception, the number of births used to be 500 births per year. This number currently reaches international records at 30,397 births every year with noticeable decrease in maternity and neonates’ mortality. The total number of births since the inauguration of the hospital is 460,043 and still counting. It’s located in the east side of Almourada street, Omdurman province, Khartoum State, it was established in 1957 mainly to provide training for midwives from the near midwifery school (which was established between the year 1917-1922) as well as delivering maternity services to women from the greater Khartoum area and the surrounding villages, the role of the hospital gradually progressed and it become a national training center in obstetrics for medical student, house officers, registrars and specialists. It also provides maternity healthcare services to women from different states of the country, to coup up with the demand of client’s needs, the hospital has to expand and has established many medical activities including the following:
• Reception and Guiney
• nursery unit with all the necessary equipments and staff.
• I.C.U caring for the critically ill and high risk patients
• Isolation and room 3
• Laparoscopic surgical and diagnostic unit.
• maternal unit and zero room.
• VIP contain lapper room for vey retch potions.

I.C.U caring for the critically ill and high risk patients.
Laparoscopic surgical and diagnostic unit.
Antenatal clinic receiving patients from all over the country and has an effective health awareness unit, HIV/AIDS, Reproductive health including family planning clinics, vaccination, health education and cervical cancer as well as breast cancer-screening programs.
Central blood bank and laboratory, Statistic unit, 3 ambulance, postnatal word, engineering, diet therapy, kitchen and management department, burning room for medical waste, pig storages, Landry

3.3 Study Population
This study was carried out among nurses in neonatal intensive care unit - Omdurman Maternity Hospital, Khartoum State, Sudan in the period from October to December 2014

3.4 Sample size
The sample size consisted of all available nurses (100)

3.5 Data tools:
Data was collected using a questionnaire contained personal data and checklist
A questionnaire was designed for this study

3.6 Data collection:
Data was collected by researcher during the period from October to December 2014 by direct self-administer questionnaire.
3.7 Ethical Considerations
The researcher took permission from the hospital of the study with an official letter from the Faculty of Nursing Sciences to the director of the hospital with the agreement of the target population, every individual observed once. consent from the chick list persons was also taken after explaining the study and its objectives to them. Confidentiality was given consideration and the information is used for the research purpose only.

3.8 Data analysis
The collected data was analyzed using Statistical Package for Social Sciences (SPSS) program, results were presented in frequencies and percentages tables and figures.
4. Results and Discussion

4-1 Results

Figure 4.1 Distribution of the Study Sample According to Educational Level (n=100)

Figure 4.1 shows that the educational level of vast majority of the study sample (52%) was bachelor.
Figure 4.2 Distribution of the Study Sample According to Years of Experience
(n=100)

Figure 4.2 shows that the highest majority of the study sample (60%) has 6-10 years of experience in N ICU.
Figure 4.3 Distribution of the Study Sample According to their Age (years) (n=100)

Figure 4.3 shows that the highest majority of the study sample age (52%) has age over More than 30 in N ICU.
Table (4-4): Distribution of study sample according to their attendance of training program regarding neonate sepsis control (n=100)

In Figure (4.4) 57% reported that they did not attended any training program regarding neonate sepsis control, 43% attended training.
Table (4-1) Distribution of the study sample according to their knowledge about definition, causes and types of neonatal sepsis

(N=100)

<table>
<thead>
<tr>
<th>Item</th>
<th>Correct answer</th>
<th>Incorrect answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Definition of neonate sepsis</td>
<td>52</td>
<td>52%</td>
<td>48</td>
</tr>
<tr>
<td>Causes of neonate sepsis</td>
<td>59</td>
<td>59%</td>
<td>41</td>
</tr>
<tr>
<td>Type of neonate sepsis</td>
<td>60</td>
<td>60%</td>
<td>40</td>
</tr>
</tbody>
</table>

In table (4-1) show 60% of study sample responded with correct answer regarding types neonatal sepsis
Table (4-2) Distribution of the study sample according to their knowledge regarding diagnosis, Signs and symptoms, Complications, risk factors of neonate sepsis

(N=100)

<table>
<thead>
<tr>
<th>Item</th>
<th>Correct answer</th>
<th>Incorrect answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Diagnosis of neonate sepsis</td>
<td>57</td>
<td>57%</td>
<td>43</td>
</tr>
<tr>
<td>Signs and symptoms of neonatal sepsis</td>
<td>46</td>
<td>46%</td>
<td>54</td>
</tr>
<tr>
<td>Complications of neonatal sepsis</td>
<td>59</td>
<td>59%</td>
<td>41</td>
</tr>
<tr>
<td>risk factors of neonatal sepsis</td>
<td>47</td>
<td>47%</td>
<td>53</td>
</tr>
</tbody>
</table>

In table (4-2) show that the majority study sample (59%) were responded with correct answers regarding complications of neonate sepsis.
Table (4-3) Distribution of the study sample according to their knowledge and practic regarding nursing care and prevention related to neonate sepsis (N=100)

<table>
<thead>
<tr>
<th>Item</th>
<th>Correct answer</th>
<th>Incorrect answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Prevention of neonatal sepsis</td>
<td>59</td>
<td>59%</td>
<td>41</td>
</tr>
<tr>
<td>Nursing care of neonate sepsis</td>
<td>60</td>
<td>60%</td>
<td>40</td>
</tr>
<tr>
<td>treatment of neonate sepsis</td>
<td>53</td>
<td>53%</td>
<td>47</td>
</tr>
</tbody>
</table>

In table (4-3) show that the majority of study sample (60%) were responded with correct answers regarding nursing care of neonate sepsis.
Table (4-4) Distribution of the study sample according to their practice towards neonatal sepsis care

<table>
<thead>
<tr>
<th>Item</th>
<th>agree</th>
<th>Dies agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
</tr>
<tr>
<td>Hand washing after any nursing intervention</td>
<td>62</td>
<td>62%</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>1/ Hand washing before and any nursing intervention</td>
<td>38</td>
<td>38%</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>2/ daily measuring of vital signs according to policy of hospital</td>
<td>53</td>
<td>53%</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>3/ Daily weighting for baby</td>
<td>56</td>
<td>56%</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>4/ Warming baby</td>
<td>58</td>
<td>58%</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>5/ adjusting of NG tube place before feeding</td>
<td>61</td>
<td>61%</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>6/ Measuring of daily intake and output fluids</td>
<td>60</td>
<td>60%</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

In Table (4-4) show that the practice of nurses intervention towards neonatal sepsis the majority 62% practice hand washing.
4.2 Discussion

Neonatal sepsis refers to infection occurring within the neonatal period, the first 28 days of life for a term baby, and up to 4 weeks beyond the expected date of delivery in a preterm baby. It is a common complication and life threatening disorder, it's one of the important contributors to these neonatal deaths is neonatal sepsis (Zaidi 2009)

Nurses' knowledge regarding neonatal sepsis, is an important issue to reduce and avoid neonatal sepsis spreading. This descriptive hospital-based study was conducted in Omdurman Maternity hospital with a main aim of assessing nurses’ knowledge and practices regarding neonatal sepsis spreading in neonatal intensive care unit NICU, It involved 100 nurses in this study as available during the period of study. There searcher went through the result and elected the following facts and information. Good general Nurses knowledge about neonatal sepsis and how to follow practices in the neonatal intensive care unit.

NICU nurses provide advanced critical care to those neonate in NICU, the neonates who are admitted to NICU are those having weakened immune system and are more prone to GA group A Strep to Cocoas and group B cocoas, many studies shows that hospital acquired sepsis one of the major causes for the mortality rate. NICU nurses can impart high quality care for the neonates if they have an increased knowledge about sepsis. Aseptic techniques performed by the NICU nurses can reduce the mortality rate and increased length of hospital stay.

The all findings of this study revealed that most respondent in this study were females (52%) were having bachelor degrees, (43%) of respondents attended training programs on neonatal sepsis control, (57%) did not attend,(52%) the highest majority of the study sample according to age (60%)of study sample had 6-10years of experience in the neonatal intensive care unit, 52% of the study sample with correct answers regarding definition of neonate sepsis, 60% of them responded with correct answers regarding types of neonate sepsis, 59% of the study sample responded with correct answers regarding causes of neonate sepsis, the 47% of the study sample responded with correct answers regarding risk factors for neonate sepsis 57% of them responded correct answers sample responded with correct answers regarding diagnosis methods of neonate sepsis, 46% of the study sample responded with
correct answers regarding Sign s and symptoms of neonatal sepsis, 59% of them responded with correct answers regarding complications of neonate sepsis, 59% of study sample responded with correct answers regarding prevention of neonate sepsis, 60% of them responded with correct answers regarding nursing care s of neonate sepsis studies show that 53% of the study sample responded with correct answers regarding treatment of neonate sepsis 56 % of them responded with correct answers regarding the daily nurses weighting for baby ,53 % of study sample responded with correct answers regarding measuring of vital signs according to policy of hospital ,38% of them responded with correct answers regarding hands washing before any nursing intervention ,58 %of study sample responded with correct answers regarding agreed warming baby ,60 % of them responded with correct answers regarding measuring of daily fluid in-out ,61% of study sample responded with correct answers regarding the check place of nose gastric tube before feeding 62%f of them correctly answers regarding hands washing after any nursing intervention, The study concluded that the nurses’ knowledge and practice regarding care of neonate sepsis was inadequate. These results are similar from results of a study conducted to assess the nurses' knowledge and practices in neonatal unit, at El-Minia University and General Hospitals. The study group was a convenient sample of 40 nurses, 22 nurses from El-Minia University and 18 nurses from El-Minia General Hospitals. Educational program for nurses' were done through using the following data collection tool:1- Pre-designed questionnaire sheet, 2- Observation checklists sheet 3- Educational and training program. This study showed significant progress in nurses' knowledge and practices in neonatal sepsis. Concluded that, by the implementation of the program there was remarkable improvement of nurses' knowledge and practices Hospitals (Abolwafa, et al. 2013)

Other study's conducted in neonatal intensive care unit NICU at Tabriz teaching hospitals , The study sample consisted of 150 employed nurses in selected settings during the study. 68% of participants reported a need for continuing education basic concepts about neonatal sepsis So, infection control committees in health centers should increase the knowledge of nurses in neonatal intensive care unit, also more experienced nurses should be employed in neonatal units. (Asadollahi et al 2015).
5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion
The study concluded that the nurses’ knowledge and practice regarding care of neonate with sepsis was inadequate.
Prevention control of neonate sepsis depend on nurses knowledge and practical of staff, in NICU could be improved by providing well organized practical training in availability of necessary recourses (hand washing facilities, personal protective equipment, antiseptic materials, daily measuring of vital signs according to policy of hospital.
Applying neonatal sepsis control program to prevent complication of neonate sepsis.
5.2 Recommendations

- It was recommended that educational program for nurses at (NICUs) is an essential key to control neonatal deaths from sepsis.
- This study should be repeat on large numbers of nurses at different hospitals.
- Applying infection prevention program for NICU control precaution protocol for nurses at Maternity hospitals that developed must be used mandatory.
- Up scaling the competence of nurses through regular training program, accompanied with supervision to maintain the high quality of neonate sepsis care.
- Monitoring and evaluation system to measure performance and plan for nurses improvements.
- Manual look book about care of neonate with sepses the neonatal sepsis has poor prognosis can leading to infant death so the prevention better than cure.
References

بسم الله الرحمن الرحيم
جامعة الجزيزة
كلية العلوم الطبية والتطبيقية
في تمريض صحة المجتمع

استبيان لنيل درجة الماجستير لتقييم ومعرفة سلوك الممرضات عن الانتان الوليد

1- مستشفى الدايات قسم حديثي الولادة
2- مستشفى الدايات قسم حديثي الولادة

1/ العمر:
- أكثر من 30 سنة
- 25-30 سنة
- 20-25 سنة

2/ الديانة:
- مسلم
- مسيحي

3/ النوع:
- ذكر
- أنثى

4/ الحالة الاجتماعية:
- عازب
- متزوج
- ماجستير
- بكلا

5/ المستوى التعليمي:
- دبلوم
- باكالوريوس
- الماجستير

6/ السكن:
- الخرطوم
- آمل

7/ سنوات الخبر في مستشفى الأطفال:
- من 11-15 سنة
- من 6-10 سنة
- أكثر من 15 سنة

8/ مصادر المعرفة:
- المناهج الدراسية
- الوسائط الإعلامية (تلفزيون – راديو – أبنتانت – صحف)
- أخرى
- من المستشفى

المعرفة
الانتان الوليد هو:
- نعم
- لا

الانتان الوليد هو عدوى باكتريه في الدم تحدث لدى الأطفال الرضع خلال الشهر الأول من الحياة
11/ الإنتان الوليدي يحدث بواسطة البكتريا

نعم لا

12/الإنتان الوليدي (تعفن الدم) المبكر يحدث خلال يوم ثلاثة تلقاه يوم بعد الولادة

لا نعم

13/الإنتان الوليدي (تعفن الدم) المتاخر يحدث خلال 3-7 يوم من الولادة

لا نعم

14/الإنتان الوليدي (تعفن الدم) المبكر يحدث بانتقال العدوي من الأم

لا نعم

15/الإنتان الوليدي (تعفن الدم) المتاخر يحدث بانتقال العدوي من الوسط المحيط

لا نعم

16/ العوامل التي تزيد من فرص الإصابة بالإنتان الوليدي:

- الولادة المبكرة أكثر من 3 أسابيع قبل الموعد المحدد
- الضايق الجنينية قبل الولادة
- وزن الجنين أقل من الوزن الطبيعي بكثير
- الحركة الأمعارية في الرحم قبل الولادة

17/ المشاكل أثناء الحمل التي تزيد من فرص الإصابة بالإنتان الوليدي:

- انكسار المياه قبل الولادة أكثر من 18 ساعة
- حمى أو حمى أخرى أثناء الحمل
- استخدام القسطرة البولية لفترة طويلة أثناء الحمل
- وجود البكتريا العقلي في مناطق المهبل أو المستقيم
- استخدام العديد من المنتشرات قبل الولادة
18/عدوي النفاس هو التهاب في المسالك التناسلية يمكن ان يحدث بعد الولادة

نعم لا

19/أسباب عدوي النفاس

أ/ التزيف

ب/ طول مدة الولادة

ج/ التهاب المسالك البولية

د/ الاختبارات المهبلية المفرطة

20/من أهم مسببات الانتان الوليدي

أ/ البكتريا إيجابية الغرام

ب/ البكتريا سلبية الغرام

ج/ الفيروسات

د/ السالمونيلا

21/ يتم التشخيص الانتان الوليدي بفحص:

أ/ فحص الدم العام

ب/ فحص البول العام

ج/ زراعه الدم

د/ فحص عوامل التجلط وفحص الغازات في الدم

22/من أعراض الانتان الوليدي

أ/ طفح جلدي

ب/ التشنجات

ج/ انخفاض درجة الحرارة
د/ ارتفاع درجة الحرارة
ه/ انخفاض السكر في الدم
و/ ارتفاع السكر في الدم

23/ هل تعتقد أن التخشب والنزف أخر مرحلة للانتان الوليدي

1- نعم 2- لا

24/ معدل الوفيات في الدول المتقدمة أكثر من الدول النامية

1- نعم 2- لا

25/ هل الانتان الوليدي يتسبب في قلة الرضاعة:

1- نعم 2- لا

26/ طرق الوقاية الأولية للحد من الاصابه بالمرض

أ/ التخلص من البكاء
ب/ التعقيم الجيد

ج/ نظافة الطفل الرضاع مباشرا بعد الولادة

د/ البكاء الغير صحيح للعمل

29/ الوقاية من الانتان الوليدي

أ/ الكشف المبكر للمرض

ب/ الرضاعة الطبيعية
ج/ التثقيف الصحي

د/ المضادات الحيوية

29/ علاج الانتان الوليدي

أ/ العلاج بالسوائل الوريدية التي تحتوي على الجلكوز والالكتروไลت فقط

ب/ المضادات الحيوية على حسب النوع المسبب لانتان
ج/الأوكسجين

30/ من مضاعفات الإنتان أُوليدي

ب/الوفاة
جدول لتقييم سلوكيات السسترات أثناء اداؤهم المهام التمريضية

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