احتياجات ومشاكل الأطفال حديثى الولادة الذين يعانون من نقص الصفائح الدموية والرعاية التمريضية المقدمة إليهم

رسالة
توطئة للحصول على درجة الماجستير
في علوم التمريض
(تمريض الأطفال)

مقدمة من
الطالبة / منى على قنصوة محمد

المعيدة بقسم تمريض الأطفال
كلية التمريض
جامعة عين شمس

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تحت إشراف

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ووكيل الكلية لشئون التعليم والطلاب

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مدرس تمريض الأطفال

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INTRODUCTION

The newborn infants undergo many profound physiologic changes at the moment of birth because they have been released from a warm, close, dark, liquid filled environment that has met all of their basic needs, into a chilly, unbounded, brightly lit, gravity based outside world (**Johnson and Davis, 2004)**.

There are many health problems that place the newborn infant at high risk, which necessitate advanced preparation with specialized skilled health personnel at birth to perform necessary intervention. Immediate, skilled handling of any problem that occur may help to safe newborn's life and also prevent future problems, such as neurologic disorders **(Hogan et al., 2006)**.

Neonatal thrombocytopenia is the most common hematologic disorder in the newborn infants. It accounts for 20% of all neonatal intensive care units admission. However, without enough platelets, there may be bleeding into the tissues, bruising of the skin, excessive bleeding may be dangerous and can affect the brain and other infants body systems. Thrombocytopenia develops in most infants with respiratory distress severe enough to require mechanical ventilation **(Klaus and Fanaroff et al., 2002).**

The newborn infants suffering from thrombocytopenia have priority needs and many health problems. So the nurse should assess their needs and implement care to meet those needs and prevent complications, as well as provide high quality care to manage their problems **(Hockenberry and Wong, 2004).**

Aim of the Study

This study aimed to assess needs, problems and nursing care of newborn infants suffering from thrombocytopenia.

NEWBORN INFANTS
(An Overview)

The neonatal period defines the first four weeks of life after birth **(El-Shimi, 2002)**, two thirds of all deaths that occur in the first year of life occur in the neonatal period and over half occur in the first 24 hours after birth **(DHHS, 2000).** The mortality rate during the neonatal period is due to exposure to a variety of hazards mainly related to inadequate care during pregnancy, poor maternal health, inappropriate management for newborn infants and pregnant mothers, poor hygiene during delivery as well as lack of essential neonatal care within the first critical hours after birth **(WHO, 1994)**. There are many blood disorders that place a newborn infants at high risk and require clinical care by a physician and other care professional in the form of; anemia, thrombocytopenia, disseminated intravascular coagulation and polycythemia **(Children's Hospitals and Health System, 2005).**

Appropriate care during pregnancy and delivery can substantially reduce newborn deaths, but it must be accompanied by special newborn care and measures to reduce deaths and disabilities. Additionally, the nurse must be knowledgeable about a newborn's normal bio-psychosocial adaptations to recognize deviations from it **(Ministry of Health, 1994).**

The nurse has responsibility and opportunity to provide the best chance for the infant to achieve his potential early environmental, emotional and psychological stimulation. Provide consistent infant stimulation based on the developmental level of each newborn infants. This means that nursing utilized the guidelines of gestational age rather than birth date in developing appropriate stimulation. Furthermore, studies have revealed that infants who are, rocked, fondled or cuddled daily have increase weight gain, fewer stool and advanced cognitive functioning **(Gunnar and Carol, 2000).**

Additionally infant's environment or his crib world should be kept well supplied with a variety of objects for auditory, tactile, and oral stimulation, his ability to grasp objects and moves his arms and legs should be carefully assessed in order to provide a variety of ways or continuing the development of these major skills **(Bergman and Gibson, 2004).**

According to **Martin et al., (2003)**, the nurse must help the neonates in the extrauterine adjustment and possess adequate knowledge for assessing the normal neonates and identifying problems to save them from further complications. Also the nurse plays a crucial role during neonatal period by promoting a stable physiologic status and must assess parent teaching needs regarding

neonatal care and identify risk factors for poor parent infant bonding **(Cohen et al., 1998)**.

It was mentioned by **Clemon (2000)** that, not all newborns will be able to achieve full wellness or transition from intrauterine to extrauterine life because of extreme insults to health at birth, which may be apparent during the intrapartum period, at birth, or at initial assessment of newborn infants. Therefore medical and nursing interventions during first weeks of life for those newborn infants are important to save their life.

All newborn infants have priority needs in the first few days of life and those needs should be fulfilled to accommodate to extrauterine life and avoid any complications **(Johnson and Davis, 2004)**.

The priority needs of newborn infants according to **Cohen et al., (1998)** include:

1. Initiation and maintenance of respiration.
2. Maintenance of thermoregulation.
3. Maintaining optimal hydration and nutrition.
4. Promoting adequate urinary and bowel elimination.
5. Providing hygienic care.
6. Preventing and detecting complications.
7. Ensuring environmental safety.

8. Establishment of an infant parent relationship.
9. Performing routine nursing intervention.

1. Initiation and maintenance of respiration

The highest priority need of the newborn at birth is to achieve and maintain adequate respiratory exchange. Under normal circumstances the newborn infant must initiate and maintain inspiration and expiration of sufficient air to replace the terminated placental source of oxygen and carbon dioxide exchange **(Martin et al., 2003).**

The normal newborn infant takes the first breath within 30 seconds after birth. The cooling of the newborn with clamping of the umbilical cord and drop in arterial oxygen or hypoxemia are the key factors in the initiation of respiration **(Silverman and Anderson, 2000)**.

A variety of physical ways to stimulate respiration may also be used by rubbing or snapping the face or spine, performing nasal suction and stimulating the rectal sphincter. Short periods of crying, which increase the depth of respirations and aid in aerating deep portions of the lungs are beneficial to the newborn **(Johnson and Davis, 2004)**. Moreover, suctioning with a bulb syringe or sterile catheter may be necessary to prevent aspiration of mucus. A suction catheter should be used only if absolutely necessary because suctioning carries a risk of apnea, reflex

bradycardia, cardiopulmonary arrest and laryngospasm **(Bergman and Gibson, 2004)**.

The newborn infant is placed in a side lying or prone position, lubricate the end of the catheter with sterile water, then insert the catheter into the oral cavity without applying pressure. When the catheter reaches the pharynx, apply pressure for 5 seconds, then withdraw for sufficient time between attempts to allow reoxygenation during suction with mechanical suction. After suctioning the pharynx, suction each naris and before each new suctioning attempt, the catheter must be rinsed with sterile water and the catheter tip must be lubricated **(Hockenberry and Wong, 2004).** While suctioning, the nurse must observe for skin and mucous membrane color, heart and respiratory rates changes, if the neonate becomes cyanotic withdraw the catheter and stop suctioning. If skin or mucous membrane color changes from pink to dusky or cyanotic, check for grunting, nasal flaring, crackles, rhonchi and other abnormal signs and immediately report any significant deviation from normal cardiopulmonary parameters, and assess vital signs continually to help prevent complications **(Cohen et al., 1998).**

2. Maintenance of thermoregulation

The thermal balance is maintained by regulation of heat loss and heat production. Maintenance of an optimal thermal environment is one of the most important aspects

of neonatal care. The environment plays a major role in heat loss, whereas, heat loss between the body and the environment occurs by evaporation, conduction, convection and radiation **(Takayama., 2000).**

The infant dried thoroughly and remove wet linens immediately following birth and wrapped in a warmed blanket. Infant should be placed in a preheated environment and maintain room temperature between 24 and 25.5 ºC and humidity about 35% - 60% **(Taylor et al., 2001).** Furthermore, initial bath postponed if there is any question regarding stabilization of body temperature. Also infant should provided with a head covering if heat loss is a problem, because large surface area of head favors heat loss. In addition to the infant should be kept away from drafts, air conditioning vents or fans. The nurse also warm all objects used to examine or cover infant and uncover only one area of body for examination or procedures and must be alert to signs of hypothermia or hyperthermia **(Hockenberry and Wong, 2004).**

3. Maintaining optimal hydration and nutrition

Hydration and nutrition are vital to immune system development and maintenance. It was recommended by **American academy of pediatrics (1998)** that initial feeding never be delayed more than 6 hours after birth and the neonate can be put to the breast in the delivery room. The neonate requires a fluid intake of 140 to 160 ml /kg / day to

maintain hydration. This requirement increases with illness, preterm birth, and excessive evaporative or radiant fluid loss **(Cohen et al., 1998).**

The bottle fed neonate usually is given sterile water for the first feeding because it is less irritating than formula or glucose water if it is aspirated. If the neonate takes the sterile water feeding without problems, water followed by 15 to 30 ml of glucose water or formula to prevent hypoglycemia. However, during the first feeding, the nurse must assess the neonates suckling ability and observe how well the neonates coordinates the suckling, swallowing, and gagging reflexes. Immediately after feeding, the nurse should check also for salivation, mucus production, aspiration and regurgitation **(Gunnar and Carol, 2000)**.

4. Promoting adequate urinary and bowel elimination

Urinary and bowel elimination must be adequate to maintain hydration and nutrition. The newborn infant begins voiding by 48 hours after birth, so failure to void within 48 hours may indicate a renal disorder, urine output should measure 1 to 2 ml/kg/hour in the first 24 hours after birth, inadequate fluid intake, increased water loss and fluid retention **(Hockenberry and Wong, 2004).** The neonatal nurse should observe pattern of voiding, onset and urine characteristics. If the neonate is losing excessive

fluids, the nurse should check skin turgor and assess the fontanels and eye area. Edema indicated by shiny, taut skin may suggest fluid retention caused by a cardiac or renal disorder. So all of these signs warrant further evaluation to help prevent complications **(Johnson and Davis, 2004).**

5. Providing hygienic care

Maintain hygiene is an important aspect of neonatal care. The skin epidermal layer protects against traumatic injury, helps minimize heat loss and serves as a barrier against bacterial infection by maintaining the ph of the skin at 4.9 **(Park and Baumgart, 2004)**. During providing hygienic care, the nurse should avoid scrubbing the skin because this may cause abrasions through which microorganisms can enter. However, to guard against heat loss during newborn bathing, bathe the neonate only after temperature and vital signs have established, especially if the core temperature is below normal. In the first hour or so after birth, use a soft sterile cotton pad soaked with warm water to remove ride blood meconium, and debris arising from the delivery, then dry the skin thoroughly to reduce the risk of infection by the hepatitis B, herpes simplex, and human immunodeficiency viruses **(Arnold et al., 2003).**

Additionally during the newborn bath, the nurse should not immerse the neonate in a tub which may cause chilling or infection of the umbilical cord or an unhealed

circumcision. Furthermore it is important to inspect the neonate's body for such variation as skin tags, unusual hair distribution, palmar creases, and other minor abnormalities which may indicate more serious abnormalities **(Fraser and Cooper, 2004).**

6. Preventing and detecting complications

The nurse should assess the newborns' condition and staying alert for subtle changes in the neonates' condition, document and report any changes immediately. Monitor laboratory values and report any deviations. Be alert for respiratory distress by assessing for changes in the respiratory rate and effort, as well as checking for accompanying skin color changes, such as duskiness or cyanosis. If cyanosis is present, supplemental oxygen may be necessary and the newborn allowed to rest between nursing procedures to minimize oxygen consumption **(Arnold et al., 2002)**.

The newborn infant may experience hypocalcemia if enteral feeding delayed. It can be manifested by twitching of extremities, cyanosis, apneic episodes, seizures and restlessness. Early detection of hypocalcemia can help in preventing complications. Monitor the serum calcium level and give enteral or parenteral calcium supplements to a hypocalcemic neonate **(Cohen et al., 1998).**

Cross infection can be a particular problem in hospitals, Therefore, newborn infants should be provided with their own equipment. The number of people handling the newborn infant should be restricted and members of staff who are liable to be a source of infection should not handle them. Friends and relative who have colds or sore throats should not allowed to visit the infant. As well as hand washing before and after handling is essential **(Fraser and Cooper, 2004).**

In this context, the nurse must wear gloves when in contact with body secretions and check eyes daily for evidence of inflammation or discharge and use appropriate eye prophylaxis as ordered. Must clean vulva in posterior direction to prevent fecal contamination of vagina or urethra. While cleaning penis, do not retract foreskin, and gently wipe away smegma. Doctor and nurse should maintain asepsis during circumcision and cover the area with a petrolatum jelly gauze dressing, keep umbilical stump clean and dry, place diaper below umbilical stump, assess cord daily for odor, color and drainage. Beside this, the nurse must apply antibacterial agent and/or alcohol to cord as appropriate and avoid artificial finger nails and nail cover **(Johnson and Davis, 2004 & Hockenberry and Wong, 2004).**

7. Ensuring environmental safety