

Hyperbilirubinemia SKINNY Reasoning

Sarah Daniels, newborn infant

Primary Concept		
Elimination		
Interrelated Concepts (In order of emphasis)		
Clinical Judgment Patient Education		
NCLEX Client Need Categories	Percentage of Items from Each Category/ /Subcategory	Covered in Case Study
Safe and Effective Care Environment		
• Management of Care	17-23%	X
• Safe and Infection Control	9-15%	X
Health Promotion and Maintenance	6-12%	X
Psychosocial Integrity	6-12%	X
Physiological Integrity		
• Basic Care and Comfort	6-12%	x
• Pharmacological and Parenteral Therapies	12-18%	X
• Reduction of Risk Potential	9-15%	X
Physiological Adaptation	11-17%	X

Part 1: Recognizing RELEVANT Clinical Data

History of Present Problem:

Sarah Daniels was born six hours ago by vaginal delivery after 22 hours of labor at 36 weeks gestation because of premature rupture of membranes. She weighed 9 lbs 0 ounces. (4090 g). Her Apgar was 8 at one minute and 9 at 5 minutes. Her newborn assessment revealed a cephalohematoma on the right-posterior aspect of her head. All other assessment data is within normal limits. Sarah has breastfed once since birth for seven minutes. She is noted to be sleepy when at the breast and not an aggressive feeder, consistent with her gestational age. She has voided once since birth, but has not yet stooled.

Sarah's mom Morgan was a diet-controlled gestational diabetic. Morgan's prenatal labs are as follows: Blood type is O +, GBS is negative, Hepatitis B is negative. Her prenatal course was unremarkable other than the premature rupture of membranes.

Sarah's blood type is A+. Blood sugars were obtained per protocol starting at two hours after birth and have been consistently > 50 mg/dL. Her hematocrit was tested per protocol of a baby of a diabetic mother born before 37 weeks and was 48% four hours after birth. Twelve hours after birth, her transcutaneous bilirubin level is 6.1 mg/dL.

Personal/Social History:

Current VS:	NIPS Pain Assessment:
T: 98.3 F/36.8 C (axillary)	Facial Expression: Relaxed
P: 138 (regular)	Cry: No cry
R: 54 (regular)	Breathing Pattern: Relaxed
	Legs: Relaxed
	State of Arousal: Sleeping
	NIPS Score: 0

Morgan Daniels is a 22-year-old single mom who attends a local community college. The father of the baby is not involved. Morgan lives with her parents, who are supportive and available.

What data from the histories are RELEVANT and must be interpreted as clinically significant by the nurse?

Reduction o Risk Potential

RELEVANT Data from Present Problem:	Clinical Significance:
<ul style="list-style-type: none"> - Premature baby born at 36th week of gestation due to premature rupture of membranes - The baby weighted 9 lbs - Apgar 8 and 9 - Assessment revealed a cephalohematoma. 	<ul style="list-style-type: none"> - This is a complication of pregnancy that can result in infection for both the baby and mother. It increases the risk for developing high bilirubin in the blood. - The baby was big which can indicate maternal diabetes or obesity - This is considered as normal - The baby has damaged blood vessels, blood pools into a mass under the skin of the baby's scalp. This is usually occurs from labor and delivery.

<ul style="list-style-type: none"> - Sarah breastfed only once for 7 minutes. - Baby sleepy at the breast, not an aggressive feeder - The baby voided once since birth and has not stooled yet. - Mom was a diet-controlled gestational diabetic. - Bilirubin 6.4 - Blood type Mother O+ and baby A+ 	<ul style="list-style-type: none"> - Baby should breastfeed no less than 8 times a day. - Mom should change positions and try different strategies to facilitate latch. The baby has jaundice and poor feeding, and lack of energy. - This is normal for a newborn to not pass the meconium right away. It is expected in 24 hours. - This could justify why the baby was a large baby. - If no antigens found, the baby is required to have a shot for Hep B. - High can be a sign of liver impairment or blood problem - The mother's blood type being different from her baby's, may cause the baby to receive antibodies through the placenta that cause abnormally rapid breakdown of red blood cells.
RELEVANT Data from Social History:	Clinical Significance:
<ul style="list-style-type: none"> - Mom is a 22 y/o single mom who attends community college. - Lives with her family - Baby's father not involved - Mother's age and becoming a single mother 	<ul style="list-style-type: none"> - She is a young single mother without the support of baby's father and educational workload can be an extra stressor for the mom. She may be seeking for support group (financial or social support). - Absence of the father in the care of the Mom and the baby may be an additional stressor. - First child, lack of experience and imbalance in support.

Patient Care Begins:

What VS data are RELEVANT and must be interpreted as clinically significant by the nurse?

Reduction o Risk Potential/Health Promotion and Maintenance

RELEVANT VS Data:	Clinical Significance:
<ul style="list-style-type: none"> - NIPS score 0 - Cry: no cry - State of arousal: sleepy - Muscle tone: relaxed 	<p>No sign of pain or distress. These vital signs are seen in premature babies.</p>
Current Assessment:	
GENERAL	<p>Calm, body flexed, no grimacing, appears to be resting comfortably</p>

APPEARANCE:	
RESP:	Breath sounds clear, nonlabored respiratory effort. No grunting, retraction or nasal flaring noted
CARDIAC:	Heart sounds regular with no abnormal beats, S1 S2, brisk cap refill, no edema. Moderate systolic murmur present over a ex.
NEURO:	Sleeping • difficult to wake for feedings does not stay awake at breast. All reflexes intact
INTEG:	Facial jaundice noted, skin color pink with acrocyanosis. Cephalohematoma to right-posterior aspect of head. Swelling does not cross sutures lines.
RELEVANT Assessment Data:	Clinical Significance:
sleepy and difficult to wake for feedings, does not stay awake at breast, facial jaundice noted, skin color pink with acrocyanosis, cephalhematoma	All of these signs are consistent with jaundice; bilirubin is rising which is why these symptoms are manifesting.

Lab Results:

	Current:	Hi h/Low/WNL?
Bilirubin (m dL)	6.4	High
H b 15-24 dL	18	WNL
Hct 45-65%)	60	WNL
Glucose 40-60m dL)	55	WNL

What lab results are RELEVANT and must be interpreted as clinically significant by the nurse?

RELEVANT Lab(s):	Clinical Significance:	TREND: 1m rove/Worsening /Stable:
Bilirubin	High bilirubin indicates liver damage and that the liver is not clearing bilirubin adequately, causing the baby to develop jaundice. The cephalohematoma is increasing red bloods and is attributing to the elevations of the bilirubin. Also, the baby's blood type is different than the mother's so the baby may be creating antibodies that destroy the red blood cells.	Worsening

Part 11: Put it All Together to THINK Like a Nurse!

1. After interpreting relevant clinical data, what is the primary problem?

Management Care/Physiologic Adaptation

Problem:	Pathophysiology in OWN Words:
	Is a condition in which there is an excessive amount of bilirubin in the blood stream, caused by the break-down of the red blood cells, which results in the formation of the bilirubin. Babies cannot easily get rid of the bilirubin because their liver is not fully developed and

Hyperbilirubinemia	cannot effectively process bilirubin and remove it from the blood. It can build up in their blood and other tissues and fluids of the body. Bilirubin levels can be tested by taking a sample of blood at the baby's heel or just by using bilirubinometer. If the levels are too high, the baby will be treated with phototherapy.
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Collaborative Care: Medical Management

2. State the rationale and expected outcomes of the medical and parenteral therapies.

Medical Management:	Rationale:	Expected Outcome:
Obtain parental consent.	To get permission to provide care to the baby	Permission received for treatment.
Check body temp hourly.	To monitor and maintain body temperature while getting therapy and prevent the baby from being overheated	The baby is maintaining body temperature.
Place eye mask over Sarah's eyes.	To prevent retinal damage	No damage to the baby's retina
Remove all clothing except for her diaper.	Clothes are removed to get as much light exposure as possible.	Baby got enough light and bilirubin levels decreased
Place Sarah on the Bilibed and under the bili lights.	For maximum exposure to the light therapy.	Baby's bilirubin levels are within normal limit
Accurate and strict I and O	To prevent dehydration, fluid imbalance, and electrolyte imbalance. To facilitate the excretion of bilirubin.	Bilirubin levels decrease through passing stools.
Repeat serum bilirubin level in 6 hours after phototherapy is initiated.	To monitor the effectiveness of the photo therapy	Bilirubin levels are stable.

Collaborative Care: Nursing

3. What nursing priorities will guide our plan of care? (Management of Care)

Nursing PRIORITY:	Hyperbilirubinemia/ neonatal jaundice	
PRIORITY Nursing Interventions:	Rationale:	Expected Outcome:
1. Provide phototherapy care to the baby as ordered by the physician	Phototherapy oxidizes bilirubin on the skin.	Patient is tolerating treatment and the bilirubin levels are normal.
2. Encourage the mother to feed the baby	Feeding the baby will help the baby passing stools and flush out excessive bilirubin level.	The baby is passing stools normally and levels of bilirubin have decreased.
3. Provide the mother with information about different types of bilirubin, the pathophysiological factors and future implications of hyperbilirubinemia.	This promotes understanding of the disease process.	The mother becomes educated on the condition and

		understands what to expect about the current condition.
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4. What psychosocial/holistic care **PRIORITIES** need to be addressed for this patient?

Psychosocial Integrity [Basic Care and Comfort]		
Psychosocial PRIORITIES :	Physical, physiological, and mental stability.	
PRIORITY Nursing Interventions :	Rationale :	Expected Outcome :
CARE/COMFORT: being present, assisting the new mother with infant management, and communication techniques. Physical comfort measures: therapeutic touch and promoting rest for the new mother	Asking questions requiring informative answers from the patient that can help bring comfort and decrease stress. This helps the patient to feel comfortable and not get overwhelmed. This helps the mother to gain confidence to perform her skills for the baby and promotes reassurance in her role. Proper rest period is important for the mother to care for herself and the baby.	The nurse has interacted with the patient and maintains a comfortable environment in which the mother can begin to settle in her new role. Patient feels at ease with her role as a mother and provides comfort to the infant. Patient has some rest time.
EMOTIONAL (How to develop a therapeutic relationship): being engaged, empathic, and building trust.	Creating emotional stability is important because it allows the mother to have life balance.	The client is able to create a bond with the baby and maintains emotional stability.
SPIRITUAL: ask questions about spirituality to assess her beliefs.	This assessment will provide the nurse with important information about the patient's beliefs and how to incorporate their spiritual beliefs. Spirituality is important to know because it allows to assess the client's well-being.	The patient is incorporating her faith and beliefs into the care and it improves her well-being.

5. What educational/discharge priorities need to be addressed to promote health and wellness for this patient and/or family? (Health Promotion and Maintenance)

Promote education on the importance of parent following up with a pediatrician to assess the baby for increasing bilirubin levels; discuss home management of mild or moderate physiological jaundice, including increased feedings, diffused exposure to sunlight (check the baby more frequently), and follow-up serum testing program. Breastfeeding 8-12 times over a 24hours. Report any excessive crying, fussiness, vomiting, or fever in the baby.