**Maryland Next Gen NCLEX Test Bank Project**

**April 5, 2023**

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| **Case Study Topic**: & Stand-alone bowtie | Pediatric sickle cell anemia complications | **Author:** | Desirée Hensel PhD, RN, PCNS-BC |

**Case Summary**

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| A 6-year-old female with a history of sickle cell disease develops leg pain and respiratory symptoms after a respiratory illness. Learners must recognize symptoms of a pain crisis and complications and manage the care of a client to decrease risk of further complications of acute chest syndrome. |

**Objectives**

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| 1. Recognize signs and symptoms of complications of sickle cell anemia  2. Differentiate of sickle cell anemia complications  3. Interpret the significance of laboratory values in a client with sickle cell anemia  4. Manage care for a client experiencing complications of sickle cell anemia  5. Evaluate care outcomes in a client experiencing sickle cell anemia |

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| **Case Study Link** | **Case Study QR Code** |
| <https://umaryland.az1.qualtrics.com/jfe/form/SV_9tB9KqxUiTMyVwi> |  |
| **Bow tie QR Code** | **Bow-tie Link** |
|  | <https://umaryland.az1.qualtrics.com/jfe/form/SV_0VyKwRSOVHPuyvs> |

**Reference**

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| Pilliteri, A. (2010). *Maternal & Child Health Nursing 6th (ed).* Wolters Kluwer. |

**Case Study Screen 1 of 6**

The emergency department nurse cares for a 6-year-old female with a history of sickle cell disease.

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| --- | --- |
| **History & Physical** | |
| **History** | Time 1330.  Admitted to emergency department from clinic. Clinic labs pending. Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to penicillin. | |
| **Vital Signs** | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | |
| **Developmental/Neurologic** | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date. | |
| **Cardio-respiratory** | HR regular, coarse crackles noted in lung bases bilaterally, no cough. | |
| **Gastrointestinal** | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | |

* Click to highlight the 4 findings that require immediate follow-up.

|  |  |
| --- | --- |
| **History & Physical** | |
| **History** | Time 1330.  Admitted to emergency department from clinic. Clinic labs pending.  Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to penicillin. | |
| **ital Signs** | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | |
| **Developmental/Neurologic** | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date. | |
| **Cardio-respiratory** | HR regular, coarse crackles noted in lung bases bilaterally, no cough. | |
| **Gastrointestinal** | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | |

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| --- | --- |
| **History & Physical** | |
| **History** | Time 1330.  Admitted to emergency department from clinic. Clinic labs pending.  Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to penicillin. | |
| **Vital Signs** | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | |
| **Developmental/Neurologic** | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date. | |
| **Cardio-respiratory** | HR regular, Coarse crackles noted in lung bases bilaterally, no cough | |
| **Gastrointestinal** | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | |

**Scoring rule: +/-**

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| Rationale: Infections can precipitate complications of sickle cell disease and severe pain can signal a vaso-occlusive (pain) crisis. Normal vital signs for a 6-year-old female are T 95.9°F to 99.5°F (35.5°C to 37.5°C), P 70-115, RR 20- 25, BP 95/60- 110/75. The child’s temperature, blood pressure and heart rate are within normal limits. The elevated respiratory rate and low pulse oximeter reading can indicate problems with perfusion or oxgenation. The breath sounds could indicate infection or the possiblity that acute chest syndrome is developing. |

**Case Study Screen 2 of 6**

The emergency department nurse cares for a 6-year-old female with a history of sickle cell disease.

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| **History & Physical** | |
| **History** | Time 1330.  Admitted to emergency department from clinic. Clinic labs pending.  Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to penicillin. | |
| **Vital Signs** | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | |
| **Developmental/Neurologic** | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date. | |
| **Cardio-respiratory** | HR regular, coarse crackles noted in lung bases bilaterally, no cough. | |
| **Gastrointestinal** | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | |

* For each finding click to indicate if the finding is consistent with a pain crisis, acute chest syndrome, or splenic sequestration. Each finding may support more than one condition.

|  |  |  |  |
| --- | --- | --- | --- |
| Findings | Pain Crisis | Acute Chest Syndrome | Splenic sequestration |
| History of recent respiratory illness | * \* | * \* | * \* |
| Pain only in lower legs | * \* |  |  |
| Crackles in lung bases |  | * \* |  |
| Respirations of 32 breaths/minute | * \* | * \* | * \* |
| Pulse oximeter 90% on RA | * \* | * \* | * \* |
| Soft abdomen | * \* | * \* |  |
| Blood pressure 108/70 | * \* | * \* |  |

Note: Each column must have at least 1 response option selected.

**Scoring rule: +/-**

|  |
| --- |
| Rationale: Recent illness can cause the hemoglobin S inside the red blood cells to stick or clump together, causing cells to elongate and form a crescent (or sickle) shape. The sickled red blood cells can block blood flow and prevent oxygen from properly circulating. Tissue distal to blockages becomes ischemic resulting in pain. A **pain crisis (vaso-occlusive episode) can occur** following a respiratory illness that results in lower oxygen levels or dehydration. Acute chest syndrome (ACS) is a complication that can follow a pain crisis if sickled cells block blood and oxygen from reaching the lungs. The most common finding in ACS is fever. Other respiratory symptoms may include elevated respiratory rates, low pulse oximeter readings, changes in breath sounds, chest pain, and cough. Splenic sequestration occurs when sickled red blood cells get trapped and destroyed in the spleen. The spleen enlarges with blood and becomes swollen and painful. A splenic sequestration crisis manifests as symptoms of shock. |

**Case Study Screen 3 of 6**

The emergency department nurse cares for a 6-year-old female with a history of sickle cell disease.

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| --- | --- |
| **History & Physical** | |
| **History** | Time 1330.  Admitted to emergency department from clinic. Clinic labs pending.  Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to penicillin. | | |
| **Vital Signs** | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | | |
| **Developmental/Neurologic** | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date. | | |
| **Cardio-respiratory** | HR regular, coarse crackles noted in lung bases bilaterally, no cough. | | |
| **Gastrointestinal** | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | | |
| **Laboratory Report** | |
| **Lab and Reference range** | | | **Time 1345: Results** |
| **Blood Urea Nitrogen (BUN)**  10-20 mg/dL | | | 12mg/dL |
| **Creatinine (Serum**)  0.9- 1.4 mg/dL (SI, 53- 97 μmol/L) | | | 1.0 mg/dL (88.4 umol/L) |
| **Hematocrit (HCT)**  35-47% (SI, 0.36 to 0.48) | | | 30% (.30) |
| **Hemoglobin (HBG)**  12-16 g/dL (SI,120-160g/L) | | | 10.4 g/dl (104g/L) |
| **White Blood Cells (WBC)**  4.5 – 10.5 x 103 cells/mm3 (SI, 4.5 – 10.5 x 109/L) | | | 6.7 x 10 3 cells/mm3 (6.7 x 109/L) |
| **Platelets**  140,000 to 450,000/ mm3 (SI, 140 to 400 × 109/L) | | | 350,000/mm3(350 × 109/L) |
| **Potassium(serum)**  3.5 to 5 mEq/L (SI, 3.5 to 5.2 mmol/L) | | | 4.5 mEq/L (4.5mmol/L) |
| **Sodium (serum)**  135 to 145 mEq/L (SI, 135 to 145 mmol/L) | | | 138 mEq/L (135 mmol/L) |

Results from the labs drawn in the clinic return.

* Drag the 2 most appropriate phrases from the choices to fill in the blank of the following sentence.

The top two care priorities for this client are and

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| --- |
| **Word Choices** |
| adminstering blood products |
| administering a fluid bolus |
| providing pain management\* |
| beginning oxygen therapy\* |
| treating infection |
| Rationale. The client most needs pain management and oxygen to stop the sickling process and treat a vasocclusive (pain) crisis. The client may also be developing acute chest syndrome, but further testing is indicated. Antibiotics may be needed if the diagnosis of acute chest syndrome is made. The labs indicate adequate hydration at this time. Interventions would be implemented to optimize hydration, but a fluid bolus should not be given until acute chest syndrome has been ruled out. While the hematocrit and hemoglobin are low, a hemoglobin greater than 10 g/dL is within target levels for children with sickle cell disease. A transfusion may be needed if the diagnosis of acute chest syndrome is confirmed, or oxygen needs continue. | | |

**Case Study Question 4 of 6**

The emergency department nurse cares for a 6-year-old female with a history of sickle cell disease.

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| --- | --- |
| **History & Physical** | |
| **History** | Time 1330.  Admitted to emergency department from clinic. Clinic labs pending.  Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to penicillin. | | |
| **Vital Signs** | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | | |
| **Developmental/Neurologic** | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date. | | |
| **Cardio-respiratory** | HR regular, coarse crackles noted in lung bases bilaterally, no cough. | | |
| **Gastrointestinal** | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | | |
| **Laboratory Report** | |
| **Lab and Reference range** | | | **Time 1345: Results** |
| **Blood Urea Nitrogen (BUN)**  10-20 mg/dL | | | 12mg/dL |
| **Creatinine (Serum**)  0.9- 1.4 mg/dL (SI, 53- 97 μmol/L) | | | 1.0 mg/dL (88.4 umol/L) |
| **Hematocrit (HCT)**  35-47% (SI, 0.36 to 0.48) | | | 30% (.30) |
| **Hemoglobin (HBG)**  12-16 g/dL (SI,120-160g/L) | | | 10.4 g/dl (104g/L) |
| **White Blood Cells (WBC)**  4.5 – 10.5 x 103 cells/mm3 (SI, 4.5 – 10.5 x 109/L) | | | 6.7 x 10 3 cells/mm3 (6.7 x 109/L) |
| **Platelets**  140,000 to 450,000/ mm3 (SI, 140 to 400 × 109/L) | | | 350,000/mm3(350 × 109/L) |
| **Potassium(serum)**  3.5 to 5 mEq/L (SI, 3.5 to 5.2 mmol/L) | | | 4.5 mEq/L (4.5mmol/L) |
| **Sodium (serum)**  135 to 145 mEq/L (SI, 135 to 145 mmol/L) | | | 138 mEq/L (135 mmol/L) |

* Select the orders from each of the categories the nurse anticipates including in the plan of care. Each category may have more than one order.

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| --- | --- |
| Categories | Orders |
| Nursing | * Ice packs to affected areas |
| * Incentive spirometry every hour while awake \* |
| * Oxygen per NC to keep pulse oximeter >95% \* |
| Medication | * IV fluids bolus 500mL over 1 hour |
| * Morphine sulfate 4.5mg (.2mg/ kg/dose) IV now \* |
| * Ampicillin 1000 mg (45mg/kg/dose) IV every 6 hours |
| Diagnostics | * Chest X Ray\* |
| * Serial blood gases |
| * Reticulocyte count\* |

Note: Each category must have at least one response selected.

**Scoring rule: +/-**

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| Rationale. Oxygen therapy is needed to stop sickling and incentive spirometry is needed to prevent acute chest syndrome. Heat can be used to manage pain, but ice packs can constrict blood vessels and worsen circulatory symptoms. Maintenance fluids are indicated, but a 20mL/ kg fluid bolus could compromise this client’s respiratory status. Morphine is indicated to treat pain. Ampicillin is contraindicated as the client is allergic to penicillin. A chest X-ray is needed to rule out acute chest syndrome. A recticulocyte count can help determine the need for a blood transfusion. A blood gas is not needed unless the client does not improve on oxygen therapy. |

**Case Study Question 5 of 6**

The emergency department nurse cares for a 6-year-old female with a history of sickle cell disease.

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| --- | --- |
| **History & Physical** | |
| **History** | Time 1330.  Admitted to emergency department from clinic. Clinic labs pending.  Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to Penicillin. | | |
| **Vital Signs** | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | | |
| **Developmental/Neurologic** | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date | | |
| **Cardio-respiratory** | HR regular, coarse crackles noted in lung bases bilaterally, no cough. | | |
| **Gastrointestinal** | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | | |
| **Laboratory Report** | |
| **Lab and Reference range** | | | **Time 1345: Results** |
| **Blood Urea Nitrogen (BUN)**  10-20 mg/dL | | | 12mg/dL |
| **Creatinine (Serum**)  Women, 0.9- 1.4 mg/dL (SI, 53- 97 μmol/L) | | | 1.0 mg/dL (88.4 umol/L) |
| **Hematocrit (HCT)**  Females: 35-47% (SI, 0.36 to 0.48) | | | 30% (.30) |
| **Hemoglobin (HBG)**  Females: 12-16 g/dL (SI,120-160g/L) | | | 10.4 g/dl (104g/L) |
| **White Blood Cells (WBC)**  4.5 – 10.5 x 103 cells/mm3 (SI, 4.5 – 10.5 x 109/L) | | | 6.7 x 10 3 cells/mm3 (6.7 x 109/L) |
| **Platelets**  140,000 to 450,000/ mm3 (SI, 140 to 400 × 109/L) | | | 350,000/mm3(350 × 109/L) |
| **Potassium(serum)**  3.5 to 5 mEq/L (SI, 3.5 to 5.2 mmol/L) | | | 350,000/mm3(350 × 109/L) |
| **Sodium (serum)**  135 to 145 mEq/L (SI, 135 to 145 mmol/L) | | | 4.5 mEq/L (4.5mmol/L) |
| **Orders** | |
| * Admit to pediatric unit * Start IV 5% dextrose and 0.45 normal saline at 65mL/hr * Incentive spirometry every hour while awake * Oxygen per NC to keep pulse oximeter >95% * Morphine sulfate 4.5mg (.2mg/ kg/dose) IV X 1 * Patient controlled analgesia per pharmacy protocol * Obtain chest X Ray * Obtain reticulocyte count | | | |

The nurse receives orders for the client.

* Click to highlight the orders the nurse should implement **immediately.**

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| **Orders** |
| * Admit to pediatric unit * Start IV 5% dextrose and 0.45 normal saline at 65mL/hr * Incentive spirometry every hour while awake * Oxygen per NC to keep pulse oximeter >95% * Morphine sulfate 4.5mg (.2mg/ kg/dose) IV X 1 * Patient controlled analgesia per pharmacy protocol * Obtain chest X Ray * Obtain a reticulocyte count | |

**Scoring rule: +/-**

Key

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| **Orders** |
| * Admit to pediatric unit * Start IV 5% dextrose and 0.45 normal saline at 65mL/hr * Incentive spirometry every hour while awake * Oxygen per NC to keep pulse oximeter >95% * Morphine sulfate 4.5mg (.2mg/ kg/dose) IV X 1 * Patient controlled analgesia per pharmacy protocol * Obtain chest X Ray * Obtain a reticulocyte count | |

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| --- |
| Rationale. The priorities should be to provide oxygen and give the morphine to decrease metabolic needs and stop the sickling process. The morphine is ordered IV; therefore, an IV must be placed to give the medication. A chest Xray should be obtained to help rule out the life threatening problem of acute chest syndrome, but this should happen only after measures have been taken to reduce sickling. A reticulocyte count is needed to help determine if a transfusion is needed, but obtaining this lab can happen after administering oxygen and morphine. The PCA would not be started until after the morphine is given. Incentive spirometry can begin after pain control measures begin to take effect. Transferring to the pediatric unit depends on when a bed is ready and available. |

**Case Study Question 6 of 6**

The emergency department nurse cares for a 6-year-old female with a history of sickle cell disease.

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| --- | --- |
| **History & Physical** | |
| **History** | Time: 1330  Admitted to emergency department from clinic. Clinic labs pending.  Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to Penicillin. | | |
| **Vital Signs** | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | | |
| **Developmental/Neurologic** | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date. | | |
| **Cardio-respiratory** | HR regular, coarse crackles noted in lung bases bilaterally, no cough. | | |
| **Gastrointestinal** | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | | |
| **Laboratory Report** | |
| **Lab and Reference range** | | | **Time 1345: Results** |
| **Blood Urea Nitrogen (BUN)**  15-25 mg/dL | | | 12mg/dL |
| **Creatinine (Serum**)  0.12–1.06 mg/dL (SI, 53- 97 μmol/L) | | | 1.0 mg/dL (88.4 umol/L) |
| **Hematocrit (HCT)**  Females: 35-40% (SI, 0.35 to 0.4 | | | 30% (.30) |
| **Hemoglobin (HBG)**  Females: 1.5-14.5 g/dL (SI,120-160g/L) | | | 10.4 g/dl (104g/L) |
| **White Blood Cells (WBC)**  5 – 14.5 x 103 cells/mm3 (SI, 5 – 14.5 x 109/L) | | | 6.7 x 10 3 cells/mm3 (6.7 x 109/L) |
| **Platelets**  140,000 to 450,000/ mm3 (SI, 140 to 400 × 109/L) | | | 350,000/mm3(350 × 109/L) |
| **Potassium(serum)**  3.5 to 5 mEq/L (SI, 3.5 to 5.2 mmol/L) | | | 4.5 mEq/L (4.5mmol/L) |
| **Sodium (serum)**  135 to 145 mEq/L (SI, 135 to 145 mmol/L) | | | 138 mEq/L (135 mmol/L) |
| **Orders** | |
| * Admit to pediatric unit * Start 5% dextrose and 0.45 normal saline at 65mL/hr * Incentive spirometry every hour while awake * Oxygen per NC to keep pulse oximeter >95% * Morphine sulfate 4.5mg (.2mg/ kg/dose) IV X 1 * Patient controlled analgesia pharmacy protocol * Obtain chest X Ray * Obtain a reticulocyte count | | | |
| **Nurses’ Notes** | |
| 1130. Started on 4 L oxygen per NC. IV started in L arm. IV Morphine given.  1145. PCA pump started. Chest Xray obtained. Reticulocyte count obtained.  1200. Pain in lower legs rated 2/10 with back pain rated 4/10. VS T 100.4F (38C), P 110, B/P RR 32, B/P 110/68, Pulse oximeter 90% on 4 Liters oxygen per NC. | | | |

The nurse reassesses the client at 1200.

* For each finding, click to specify if the finding indicates that the client’s status has improved, worsened, or not changed.

|  |  |  |  |
| --- | --- | --- | --- |
| Finding | Improved | Worsened | Not changed |
| Leg pain | * \* |  |  |
| Respiratory status |  | * \* |  |
| Blood pressure |  |  | * \* |
| Back pain |  | * \* |  |
| Temperature |  | * \* |  |

**Scoring rule: 0/1**

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| Rationale. The leg pain has decreased, indicating perfusion is most likely improving to the lower extremities, but new back pain could indicate involvement of other organs including acute chest syndrome. The client was started on oxygen. The finding that the tachypnea and the pulse oximeter readings have remained the same despite oxygen indicate the client’s respiratory status is declining. The client also now has a low grade fever which could indicate pneumonia or acute chest syndrome. The client’s blood pressure has remained stable. |

**Bow-Tie Template**

The emergency department nurse cares for a 6-year-old female with a history of sickle cell disease.

|  |  |  |
| --- | --- | --- |
| **History & Physical** | | |
| **History** | | Time 1330.  Admitted to emergency department from clinic. Labs drawn in clinic.  Upper respiratory infection X 3 days. Sickle cell disease diagnosed at birth. Pain in both legs started 12 hours ago, now rated 7/10. Given 500 mg acetaminophen OTC 2 hours ago. Allergic to penicillin. | | |
| **Vital Signs** | | T 99F/37.2C, P110, RR32, B/P 108/70, Pulse oximeter 90% on RA. | | |
| **Developmental/Neurologic** | | Appropriate for age, Weight 50lbs/22.7kg, Immunizations up to date. | | |
| **Cardio-respiratory** | | HR regular, murmurs, chest pain, or cough. | | |
| **Gastrointestinal** | | Abdomen soft. No complaints of nausea, vomiting or diarrhea. Regular diet for age. | | |
| **Laboratory Report** |
| **Lab and Reference range** | | | | **Results** |
| **Blood Urea Nitrogen (BUN)**  10-20 mg/dL | | | | 12mg/dL |
| **Creatinine (Serum**)  Women, 0.9- 1.4 mg/dL (SI, 53- 97 μmol/L) | | | | 1.0 mg/dL (88.4 umol/L) |
| **Hematocrit (HCT)**  Females: 35-47% (SI, 0.36 to 0.48) | | | | 30% (.30) |
| **Hemoglobin (HBG)**  Females: 12-16 g/dL (SI,120-160g/L) | | | | 10.4 g/dl (104g/L) |
| **White Blood Cells (WBC)**  4.5 – 10.5 x 103 cells/mm3 (SI, 4.5 – 10.5 x 109/L) | | | | 6.7 x 10 3 cells/mm3 (6.7 x 109/L) |
| **Platelets**  140,000 to 450,000/ mm3 (SI, 140 to 400 × 109/L) | | | | 350,000/mm3(350 × 109/L) |
| **Potassium(serum)**  3.5 to 5 mEq/L (SI, 3.5 to 5.2 mmol/L) | | | | 4.5 mEq/L (4.5mmol/L) |
| **Sodium (serum)**  135 to 145 mEq/L (SI, 135 to 145 mmol/L) | | | | 138 mEq/L (135 mmol/L) |

* Complete the diagram by dragging from the choices below to specify what condition the client is most likely experiencing, 2 actions the nurse should take to address that condition, and 2 parameters the nurse should monitor to assess the client’s progress.

|  |  |  |
| --- | --- | --- |
| Action to take |  | Parameter to monitor |
|  | Condition most likely experiencing |  |
| Action to take |  | Parameter to monitor |
|  |  |  |
| **Actions to take** | **Potential conditions** | **Parameters to monitor** |
| Administer 0.2mg/kg IV morphine \* | Acute chest syndrome | Pain levels\* |
| Administer IV broad spectrum antibiotics | Aplastic crisis | Breath sounds |
| Begin oxygen therapy to keep saturations >95%\* | Sequestration crisis | Hemoglobin levels |
| Prepare for a STAT blood transfusion | Pain crisis\* | Oxygen saturations\* |
| Begin a 500mL fluid bolus |  | Blood pressure |

**Scoring rule: 0/1**

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| --- |
| Rationale. The history, labs, and pain characteristics in lower legs suggest that the client is most likely experiencing a vaso-occlusive (pain) crisis. Acute chest syndrome typically would include other respiratory findings such as chest pain, breath sound changes, or cough. Aplastic anemia presents as severe anemia. A sequestration crisis manifests as abdominal pain and symptoms of shock. The client most needs IV morphine and oxygen to decrease metabolic demands and stop the sickling process. IV fluids may be needed, but the labs and vital signs do not indicate a fluid deficit warranting a 500mL bolus for a 20kg child. Antibiotics are not yet indicated as the child is afebrile with a normal WBC. Hemoglobin levels are within the target range for a child with sickle cell disease. A transfusion may be indicated, but it is not needed STAT. Interventions are targeted at reducing pain and improving oxygenation. These are the best parameters to monitor for the effectiveness of treatment. |