



Go To Clinical Case

While caring for this client, be sure to review the concept maps in chapters 3 and 4.

Case 2: Electrolyte imbalance and fluid overload from acute renal insufficiency

Related Concepts: Elimination, Hormonal, Perfusion, Oxygenation

Threaded Topics: Culture, Language Barrier, Dialysis, Diet Education, Diabetes, Community Resources

Alfredo Hernandez is a 38-year-old male who lives in southern Texas. He and his family migrated to the United States from Guatemala a few years ago and live together in a small house. His primary language is Spanish, but he has acquired the ability to understand and speak some English in his three years here. Like his mother, father, sisters, and cousins, he has Type II diabetes. His diabetes is poorly controlled, and he is now insulin dependent. He has hypertension, decreased vision and his feet are often “cold and numb.” His family brings him to the community hospital today because he’s having a hard time breathing.



1. What should be the nurse’s first action after placing Alfredo in a hospital gown?
 1. Obtain a glucose monitor reading.
 2. Assess the blood pressure.
 3. Take an oxygen saturation reading.
 4. Place Alfredo on an EKG monitor.

Nurse Think
HEALTHCARE SYSTEM

Name: Alfredo Hernandez
Health Care Provider: Juan Perez, PA
Code Status: Full code

Age: 38 years
Allergies: NKDA

TRIAGE ASSESSMENT

Dec. 3 1600	Temp 97.2°F (36.2°C), HR 110, BP 122/75 (91), RR 24, Oxygen Saturation 91% on room air; blood glucose monitor reading is 240 g/dL. Alert and oriented x 3; Lungs with bilateral fine crackles ½ way up the lung fields, moist cough, respirations labored; Bowel sounds active; Denies pain; States “Me cuesta mucho respirar.” He has 3+ pedal edema and 1+ dorsalis pedis pulses, bilaterally.
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2. NurseThink® Prioritization Power!



Reflect on Alfredo's assessment findings and identify the **Top 3 Priority** assessment concerns that indicate fluid volume excess.

1. _____
2. _____
3. _____

3. What should be the nurse's priority nursing action?

1. Obtain an order for insulin.
2. Raise the head of the bed.
3. Place oxygen at 2 L/nasal cannula.
4. Obtain a translator.

Clinical Hint: Healthcare organizations that receive Medicare, Medicaid, or other sources of federal funds have a legal obligation to provide oral interpreters and written translated documents. Failing to provide language access services to limited English proficiency patients is a form of national origin discrimination. There was case law in the United States Supreme Court (Lau v. Nichols, 1974) that established this basic principle.

The nurse obtains prescriptions from the HCP.

The screenshot shows the NurseThink Healthcare System interface. At the top, there are navigation tabs: Nursing, Flow Sheets, Provider (selected), Labs & Diagnostics, MAR, Collaborative Care, and Other. Below the tabs, the patient information is displayed: Name: Alfredo Hernandez, Age: 38 years, Health Care Provider: Juan Perez, PA, Allergies: NKDA, and Code Status: Full code. The main section is titled "HEALTH CARE PROVIDER PRESCRIPTIONS" and contains a table with the following data:

Date/Time	Prescriptions
Dec. 3 1700	<ol style="list-style-type: none">1. Chest x-ray.2. O₂ titrate to keep saturation > 94%.3. Furosemide 40 mg IV times 1 now.4. Peripheral IV.5. Complete blood count, comprehensive metabolic panel.

4. Place the prescriptions in order of the priority in which the nurse should complete them. _____

1. Request chest x-ray and lab draw.
2. Place O₂ at 2 L/nasal cannula.
3. Deliver furosemide 40 mg IV dose.
4. Place IV line.

5. The nurse reassesses the oxygen saturation reading after 15 minutes, and it is 94%. What should the nurse do next?

1. Nothing, this is acceptable.
2. Notify the HCP.
3. Increase the O₂ to 3 L/nasal cannula.
4. Place Alfredo on a simple mask.

6. The chest x-ray is completed. The radiologist calls the nurse to say "the lungs have fluffy consolidation bilaterally." How should the nurse interpret this report?
1. There is pneumonia in both lungs.
 2. Atelectasis is present.
 3. There is fluid accumulation in both lungs.
 4. A pneumothorax is present.
7. The nurse is evaluating the client's response to the furosemide. Which finding determines the dose was effective?
1. Urine output of 200 mL over 4 hours.
 2. Crackles bilaterally in the lower bases.
 3. Jugular venous distension evident.
 4. Potassium level decreases.

LABORATORY REPORT			
Lab	Normal	Dec. 3	
WBC	4,000 - 10,000 μ L	6.2	
Hemoglobin	12.0 - 17.0 g/dL	9.9 L	
Hematocrit	36.0 - 51.0%	30 L	
RBC	4.2 - 5.9 cells/L	3.0 L	
Platelets	150,000 - 350,000 μ L	234,000	
Calcium	9 - 10.5 g/dL	7.9 L	
Chloride	98 - 106 mEq/L	96 L	
Magnesium	1.5 - 2.4 mEq/L	2.6 H	
Phosphorus	3.0 - 4.5 mg/dL	4.6 H	
Potassium	3.5 - 5.0 mEq/L	5.5 H	
Sodium	136 - 145 mEq/L	133 L	
Glucose	70 - 100 mg/dL	239 H	
BUN	8 - 20 mg/dL	32 H	
Creatinine	0.7 - 1.3 mg/dL	2.9 H	
Creatine Kinase (CPK)	30 - 170 U/L	57	
Lactic Dehydrogenase (LDH)	60 - 100 U/L	70	
Aminotransferase, Aspartate (AST)	0 - 35 U/L	32	
Aminotransferase, Alanine (ALT)	0 - 35 U/L	42	
GGT	9 - 48 U/L	19	

8. What hypothesis can the nurse make from the lab and chest x-ray reports?

1. Alfredo has renal insufficiency causing fluid overload.
2. Alfredo has signs of liver failure causing fluid shifting.
3. Alfredo has an infection that is likely pneumonia.
4. Alfredo has poor myocardial contractility causing fluid excess.

9. What should the nurse include in Alfredo's plan of care? Select all that apply.

1. Daily weights.
2. Strict intake and output.
3. Encourage oral fluids.
4. Monitor pulse for irregularity.
5. Restrict dietary sodium and potassium.

Alfredo is admitted to the medical unit with dyspnea and renal insufficiency. A nephrologist is consulted and prescribes a 24-hour urine collection for creatinine clearance.

10. The nurse requests a translator to instruct Alfredo about the process of collection. What should the nurse include in the teaching? Select all that apply.

1. All urine must go into the container over the next 24 hours.
2. The container with urine must be kept at room temperature.
3. Only this dark container can be used to collect the urine.
4. Empty your bladder now, before we begin the test.
5. There will be signs in the bathroom alerting the staff of this test.

11. Alfredo is placed on a fluid restriction of 1 liter per 24 hours. He is asking for something to drink at 2245. Based on the intake and output record, what is the nurse's best response?

1. "No, I'm sorry, but you've had your allotment of fluid for the day. I can bring you some oral swabs."
2. "You have met your allotment of fluid for the day. Let me listen to your lungs to see if I can give you something more."
3. "You have almost met your fluid restriction for the day; I'll bring you some ice chips."
4. "You can have a glass of juice, water or milk. Which would you prefer?"

Time	Intake	Output
2300-0700	> 100 mL juice	> 50 mL
0700-1500	> 240 mL soup > 120 mL gelatin > 6 oz. milk	> 250 mL > 100 mL
1500-2300	> 150 mL juice > 110 mL flavored ice > 2 oz. water	> 50 mL
Totals		

12. The nurse is mentoring a second-semester nursing student who is studying fluid assessment findings. Help the student match each finding with its appropriate fluid status.

<input type="checkbox"/> Hepatomegaly	<input type="checkbox"/> Weight gain	A. Fluid Overload B. Fluid Deficit C. Either Overload or Deficit
<input type="checkbox"/> Cerebral edema	<input type="checkbox"/> Puffy eyes	
<input type="checkbox"/> Orthostatic hypotension	<input type="checkbox"/> Cool skin	
<input type="checkbox"/> Tachycardia	<input type="checkbox"/> Edema	
<input type="checkbox"/> Thready pulse	<input type="checkbox"/> Distended jugular veins	
<input type="checkbox"/> Thirst		

Two days after admission, the nurse caring for Alfredo learns through an interpreter that his family is frustrated that he is getting weaker. Not familiar with Alfredo, the nurse reviews the medical record to better understand what is happening in order to address the family's concerns.

LABORATORY REPORT				
Lab	Normal	Dec. 3	Dec. 4	Dec. 5
WBC	4,000 - 10,000 μ L	6.2	10.2	12.3 H
Hemoglobin	12.0 - 17.0 g/dL	9.9 L	9.4 L	9.0 L
Hematocrit	36.0 - 51.0%	30 L	29 L	30 L
RBC	4.2 - 5.9 cells/L	3.0 L	2.9 L	2.8 L
Platelets	150,000 - 350,000 μ L	234,000	249,000	300,000
Calcium	9 - 10.5 g/dL	7.9 L	7.9 L	7.8 L
Chloride	98 - 106 mEq/L	96 L	95 L	96 L
Magnesium	1.5 - 2.4 mEq/L	2.6 H	1.4 L	1.3 L
Phosphorus	3.0 - 4.5 mg/dL	4.6 H	4.6 H	4.8 H
Potassium	3.5 - 5.0 mEq/L	5.5 H	5.7 H	5.8 H
Sodium	136 - 145 mEq/L	133 L	132 L	131 L
Glucose	70 - 100 mg/dL	239 H	201 H	168 H
BUN	8 - 20 mg/dL	32 H	29 H	34 H
Creatinine	0.7 - 1.3 mg/dL	2.9 H	3.0 H	3.3 H
Glomerular Filtration Rate (GFR)	> 60 mL/min/1.73m ²			16 L
Daily Weight		65.9 kg	66.8 kg	68.2 kg
Oxygen Saturation		94%	95%	94%
Oxygen		2 L/NC	3 L/NC	4 L/NC
Blood Pressure (MAP)		122/75 (91)	139/88 (105)	145/92 (110)
Heart Rate		110	115	117

13. NurseThink® Prioritization Power!



Reflect on Alfredo's trends in data and identify the Top 3 Priority concerns.

1. _____
2. _____
3. _____

14. Knowing that Alfredo's condition is worsening, what potential complication(s) should the nurse be monitoring for? Select all that apply.

1. Cardiac dysrhythmias.
2. Pulmonary edema.
3. Sepsis.
4. Liver failure.
5. Deep vein thrombosis.

15. It is determined that Alfredo will be started on hemodialysis. A temporary dialysis catheter is placed into his right internal jugular. What should the nurse assess with this type of dialysis catheter?

1. Bruit and thrill.
2. Circulation to the extremity.
3. Dressing intactness.
4. Radial pulse.



16. The nurse learns that Alfredo is going to dialysis in 3 hours. He has several medications due, which ones should the nurse hold before dialysis? Select all that apply.

1. Regular insulin, 5 units subcutaneously.
2. Metoprolol 25 mg orally.
3. Furosemide 80 mg orally.
4. Calcium acetate 667 mg orally.
5. Amoxicillin 250 mg orally.

Alfredo completed his first hemodialysis treatment and returns to the medical unit. Upon return, the nurse assesses that he is sleepy but arousable and cooperative; warm to touch but afebrile; heart rate is 115 beats per minute, respirations are 18 with an oxygen saturation of 96% on room air, and blood pressure is 89/45 (60). His glucose monitor reading is 65 g/dL. The dressing to his temporary dialysis catheter is intact, and the red and blue clamps are closed.

17. THIN Thinking Time!

Reflect on the post-dialysis information and apply **THIN Thinking**.

T - _____

H - _____

I - _____

N - _____

- T - Top 3
- H - Help Quick
- I - Identify Risk to Safety
- N - Nursing Process

Scan to access the 10-Minute-Mentor on THIN Thinking.



NurseThink.com/THINThinking

18. What action should the nurse take in response to the post-dialysis assessment? Select all that apply.

1. Lower the head of the bed.
2. Deliver fluids - wide open.
3. Have Alfredo drink juice.
4. Apply a cooling blanket.
5. Apply oxygen.

19. Over a few days, Alfredo's condition improves. The nurse is preparing him for discharge. What is important to include? Complete the discharge instructions on the following page.

20. Using the interpreter for the discharge instructions, the nurse identifies that Alfredo is concerned about complying with the renal and diabetic diet with his preference of traditional Hispanic foods. Which action should the nurse take?

1. Plan to have the hospital prepare his meals.
2. Identify a Spanish-speaking dietitian in the community that Alfredo can consult.
3. Teach his family about the dietary restrictions, encouraging him to stay compliant.
4. Arrange for meals-on-wheels to deliver his meals.

	Types	Frequency	Access Site	Complications
Hemodialysis At home or in a center	Short daily	2-3 hours, 6 days/ week	<ul style="list-style-type: none"> > Arteriovenous (AV) fistula > AV graft > A catheter 	<ul style="list-style-type: none"> > Infection > Blood clots > Water and/or electrolytes imbalance
	Traditional	3-4 hours, 3 times/ week		
	Nocturnal	6-8 hours 3+ days/ week		
Peritoneal dialysis	Continuous ambulatory peritoneal dialysis (CAPD)	4-5 times/day	<ul style="list-style-type: none"> > Peritoneal catheter 	<ul style="list-style-type: none"> > Peritonitis
	Automated peritoneal dialysis	6-8 hours every night		

	
Name: Alfredo Hernandez Age: 38 years Health Care Provider: Juan Perez, PA Allergies: NKDA Code Status: Full code	
DISCHARGE INSTRUCTIONS	
Discharge	Diet
	Oral fluid intake
	Activity
	Dialysis catheter care
	Follow-up with dialysis
	Diabetes management
	Daily self-monitoring
	Problems to report to HCP
	Medication instructions
	<ul style="list-style-type: none"> > Regular insulin > NPH insulin > Metoprolol > Renal vitamins > Aluminum hydroxide > Famotidine