**Scenario Title**: Fat Embolism – Multiple Fractures – MVA - Trauma  
**Patient Name**: Terri May  
**Medical Record #**

<table>
<thead>
<tr>
<th>Level (year 2, second term)</th>
<th>Course: Nur 211</th>
</tr>
</thead>
</table>

**Author, w/email**: Marilyn McGuire-Sessions, RN, MSN & Maureen Harter, RN, BSN

**Keywords - Theory**: Musculoskeletal, Respiratory, Multiple FX, Fat Embolism

**Keywords - Skills**: Foley Cath, Medication Administration IVP, IVPB, Oral,

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**Patient Case History:** 33 y/o female admitted in the ED 2 days ago for a bicycle vs auto crash L-femur fracture, L-wrist fracture, L-rib fracture and multiple face lacerations. Diagnosed with HIV and Hepatitis C about 6 months ago. History of IV drug use from age 19-24. She’s been clean for 9 years. 2 days post-op of repair of femur and wrist fractures. Patient is transferred from ICU to Med-Surg.

Pt: Height 5'7"  Weight 123#  
VS = BP 110/70, HR 88, RR 14, T 38.0, SpO2 96% on 2 L NC

**Medical History**: HIV Hepatitis C

**Allergies**: NKDA  
**Height**: 5'7"  
**Weight**: 123#

**Meds**:  
1. Indinavir 800 mg q 8 hr  
2. Combivir 1 tab bid

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**Physician Orders: by Dr. Douglas Rankin, for Terri May, DOB 07/02/1972 (age 33) Allergies NKA**

1. Transfer to Med-Surg unit  
2. DX: S/P repair L-Femur, L-Wrist, L-Rib FX r/t bike vs auto crash with history of HIV and Hepatitis C  
3. IVF NS @ 150cc/hr  
4. Clear liquid diet – advance to regular as tolerated  
5. Levaquin 500 mg IV q day  
6. Indinavir 800 mg po q 8 hr  
7. Combivir 1 tab po bid  
8. Reglan 10 mg IV before meals and at HS for 2-8 weeks  
9. Morphine Sulfate 1 mg IVP 15 min prior to PT  
10. Morphine Sulfate 2 – 3 mg IVP q 1-2 hrs prn pain  
11. Vicodin 1-2 tabs q 4-6 hrs prn pain  
12. Lovenox 30 mg SQ q 12 hrs  
13. PT/OT to evaluate and treat  
14. Maintain SpO2 over 95% may titrate up with 2 L O2 per NC
### Initial Computer Set Up

Notify HO: SPB>140<80, DBP>90<50; HR >120<50; RR >22<8; T>38.5; UOP <30cc/hrx8hrs

<table>
<thead>
<tr>
<th>VS</th>
<th>BP</th>
<th>HR</th>
<th>RR</th>
<th>T</th>
<th>SpO₂</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>114/72</td>
<td>86</td>
<td>16</td>
<td>38</td>
<td>96%</td>
<td></td>
</tr>
</tbody>
</table>

**Lungs:**  
Lt: normal  
Rt: normal  
Bowel sounds: normal

**Heart:**  
Rhythm:  
Waiting:

**Other:**  

**Report to start scenario:**  
Patient was admitted from ICU earlier this shift. “Patients vital signs have been stable. IV has infiltrated and will needs to be restarted, bag was done so will need a new one. New order for IV of NS with 20meq KCL to run at 150cc/hr. Haven’t had a chance to get to restarting it, need to put in an 18 gauge catheter for potential blood administration later. Patient was given 2mg Morphine 2 hours ago, her pain rating was a 7 and the morphine brought her pain down to a 4 which was acceptable to the patient. PT will be up to evaluate and start treatment of patient. Can give 1mg Morphine IV before treatment. Dressings are intact.

### Priorities (in order)

<table>
<thead>
<tr>
<th>SN Interventions</th>
<th>Patient Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess VS, dressings, prepare to start IV</td>
<td>Uses HIV and Hepatitis C precautions – Universal Precautions</td>
</tr>
<tr>
<td>How am I doing? Can I have some more pain medicine, I am really hurting (pain rating is now a 9)</td>
<td></td>
</tr>
<tr>
<td>Assess orders for pain medicine</td>
<td></td>
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</tbody>
</table>

### Terri May Scenario Con’t

<table>
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<tr>
<th>SN Interventions</th>
<th>Patient Responses</th>
</tr>
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<tbody>
<tr>
<td>Keeps in mind history of drug abuse, knowing priority is pain management at this point in care for this patient, need accurate documentation of pain medicine administration.</td>
<td>So when do I get the pain medicine. I am really hurting</td>
</tr>
<tr>
<td>Gather supplies to start IV</td>
<td>Start IV with appropriate technique, and HIV, Hep C precautions – Standard precautions</td>
</tr>
<tr>
<td>So do I get pain medicine after you start the IV</td>
<td></td>
</tr>
<tr>
<td>Patient has trouble breathing and tells students I am having trouble breathing</td>
<td></td>
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</table>

**Heart:**  
Rhythm:  
Waiting:
What are these red spots on my chest.

Re asses VS, put on O2, call physician

Physician - Dr. Rankin says put on O2 at 4 l per NC, I will be right in. Dr. Rankin goes in to assess patient, still having trouble breathing, Dr. Rankin says it looks like petechial hemorrhages- lets send her up to the ICU

Sudden change in VS : heart rate increased to 112, dyspnea with resp at 24, temp 38.3 C, po2 decreased to 88%, BP 140/84. ( pulse and resp will continue to increase and po2 to decrease depending on intervention from student)

Physician orders O2 at 4l per NC, and stat blood draw for CBC, PTT, ESR, serum calcium, and serum lipase, chest x-ray, EKG, arterial blood gas and UA. Call me with the results or if the patients condition worsens

**Faculty Notes** (theory, medications, etc.)

1) Procedure for starting IV (see handout from skills lab)
2) Procedure for administering medication IV push (see handout from skills lab)
3) Toradol (do not mix in small volume with morphine or Demerol, IV bolus must be given over no less than 15 sec.
4) S/S of Fat embolism syndrome (chest pain, dyspnea, anxiety, mental status change – esp in elderly, petichiae around neck, upper chest, buccal membrane, conjunctiva, decreased paO2) (decreased hct, decreased platelet count, increased sed rate, fat in urine)(see last 2 simman responses)
5) Indinavir – protease inhibitor – can reduce viral load to a level that is undetectable. Adverse effects – hyperglycemia, diabetes, hyperlipidemia, fat redistribution, reduced bone mineral density, CNS – head ache, insomnia, dizziness, CV – chest pain palpitations, GI – abdominal pain, nausea vomiting, diarrhea. Drug interactions – due to being metabolized by cytochrome p450 enzymes protease inhibitor levels can increase with ketaconazole, clarithromycin, and grapefruit juice. Rifampin, Phenobarbital, phentoin, and carbamazepine can reduce levels of protease inhibitors. Protease inhibitors can slow metabolism of triazolam, midazolam, ergotamine, dihydroergotamine lovastatin and
simvastatin therefore increasing their levels.

7) Combivir – contains 150mg lamivudine (NRT – Nucleoside Reverse Transcriptase Inhibitor) – minimal side effects, and 300mg zidovudine (NRT). Side effects – GI

Faculty discussion Con’t for Terri May

<table>
<thead>
<tr>
<th>Debrief Priorities</th>
<th>(facts, feelings, behaviors, priorities, noticing, interpreting, responding, evaluating and reflecting-what went well, what would you do differently)</th>
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<tbody>
<tr>
<td>1) S/S fat embolism and steps to take, how would patient progress if correct measures were not taken</td>
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<tr>
<td>2) Implications for use of morphine in patient with history of drug abuse</td>
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<tr>
<td>3) Implications and precautions for patient with HIV and hepatitis C</td>
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<tr>
<td>4) Discussion reinforcement of giving IV push medications</td>
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<td>5) Decreased healing with increase pain</td>
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Possible Increased Complexities for this scenario:

1.

References:

1.

Suggestions for Future Advanced Scenarios:

1.

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