SimPHARM Case Description

SimPHARM™

Case Level: Early Learning
Case Run: Single visit, 1 hour
Patient: Theo Anderson

Patient Description:

Introduction to Theo:

Mr. Anderson is admitted under your care with a simple fracture of the tibia with evidence of deformity in the local area. The medical team would like you to chart some analgesia.

Gender: Male

Weight: 176 lbs. / 80 kg

Height: 5′ 11″ / 180 cm

Age: 60

Case Details

Theo has no pre-existing conditions. He arrives with the paramedical team currently feeling little if any pain. Theo had received a sedative prior to your arrival as he was extremely agitated. He is just waking up from this and his pain is returning. The pain will return over the next half-an-hour.

Pathologies:

Condition	Severity	Occurrence	Duration	Probability
Simple fracture of the tibia	Severe pain	Acute – maximum pain occurs if untreated at 40 minutes into case.	Duration of case	100%

Pre-existing Medication:

Nil

Availability of drugs and laboratory investigations:

Only three drugs are available in this case (paracetamol [acetaminophen], naproxen and morphine). All investigations are available for students.

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Student Activities:

Students are expected to help treat Theo's pain. Pain is measured using a visual analog scale (VAS) with 10 being the worst possible pain and 0 being no pain. A successful treatment should yield a pain score of < 3-4. The limited number of options reduces the complexity associated with this acute case.

Educational Summary

Although this is an early learning case, there are several issues that students need to deal with:

1. Dealing with real-time activities.
2. Being able to access resources and choose an appropriate treatment in a limited time frame.
3. Having to make a decision without having all available information.

The activity required has low complexity as it is a single condition (simple fracture of the tibia) with no other concurrent conditions. However, it has a high stress element. The minute-for-minute real-time simulation limits the extensiveness of the student's research. Also it means that lab tests, such as renal function, cannot be performed in the allocated time frame (note a serum creatinine concentration takes 1 hour to receive from the time of order).

Learning Objectives

Learning objectives for the student:

1. To identify goals for pain management.
2. To identify what workup is needed for this case.
3. To choose from the available options of pain management.
4. To monitor outcomes and determine whether Theo has been effectively treated.
5. To reflect on their approach to the case.
    a. How does a rapid acute (non-life threatening but severe) event affect their ability to make decisions?
    b. What resources were helpful in determining the choice of care and ongoing monitoring?

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Teaching Activities:

Synchronous Teaching

Part 1: Actively Treat Theo (From Start of the Case)

Setting: As a group.

Purpose: To enable therapeutic decision making in a time-pressured setting.

Tutor Activity: Instructor to start the case and show Theo on a projector screen, while explaining basic treatment strategies for a fracture. Illustrate the real-time simulation and the increasing VAS score. Leave the case running but do not work up the patient or administer any drugs (this is the control scenario).

Student Activity: To enable therapeutic decision making in a time-pressured setting.

- Work up the patient.
- Determine the choice of drug, dose, dose rate, and route of administration.
- Give the dose.
- Justify decision and monitor effects.

Part 2: Reflection During Case (@ 30 minutes)

Setting: Round table – each student individually.

Purpose: To discuss choice and reasoning for their decision.

Activity: Each student to explain.

- Background information they looked for.
- Their treatment goals.
- Their treatment choice and why they made that choice.
- What happened (including any side effects that may have occurred).

Part 3: Reflection at End of Case (@ 60 minutes)

Setting: Round table – each student individually.

Purpose: To reflect on their decision-making process.

Activity: Each student to explain.

- Their decision.
- Whether they attained their treatment goals.
- Whether they changed their decision strategy during the case.
- What effects happened (including any side effects that may have occurred).

Assessment Criteria:

The student:

- Took an appropriate patient history
- Set patient-relevant goals for treatment of pain
- Initiated an analgesic with justification of choice
- Determined, with monitoring, whether their choice was reasonable
- Manage any emerging acute symptoms (if present).