

NUR356 Complex Care Case Studies 2021

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Law and Ethics

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Useful websites and links

Below is a list of useful resources that may help you with the case study on the next page

Australian Commission on Safety and Quality in Health Care

[Standard](#)

[Medication educational tools](#)

[Labelling of medication standards](#)

Verbal medication orders

National Coordinating Council for Medication Error Reporting and Prevention

[Recommendations to reduce medication errors](#)

Verbal Orders in an Emergency/Priority Case/MET Call

In time critical situations where a written prescription would delay administration and have an impact on patient outcomes

- MO must be present to treat patient, give verbal order for medication
- Verbal orders are only valid during critical or life threatening situations
- Verbal orders must be documented in the "once only" section of the medication chart or on the MET Record
- The prescriber must sign the verbal order prescription immediately after the emergency situation
- Two authorised staff members are required to listen to the verbal order and repeat back
- If the administering staff member is separate to the two staff preparing the medication the vial must be sited and dilution confirmed by the third person prior to administration

Image from Royal Perth Hospital Nursing Practice Standard (2017)

Case study

Case Study

Jenny is a 37 year old female who has been admitted to the ward for a cholecystectomy.

On her return to recovery, Jenny is noted to be in pain, and she was prescribed Morphine 2.5 - 5 mg Intravenously (IV) on the PRN side of her medication chart. She was given an initial dose of 5mg IV.

3 minutes after having the morphine administered, Jenny starts to feel unwell and is short of breath, she also states she feels itchy and feels like her tongue is swelling. She is noted to have a rash that has suddenly appeared over her chest and upper back. The doctor attends and verbally requests 'point 5 of adrenaline' to be given. The RN on duty gives 5mL of adrenaline 1:10,000 IV.

The patient suddenly complains of severe, crushing chest pain before losing consciousness and suffering a cardiac arrest. The patient is resuscitated and survives the event, however will have cardiac issues for the remainder of her life.

Questions related to the case study

Questions surrounding the case study

Question 1 - Looking at this case study, which of the mistakes could have been prevented and why? (3 Marks)

Name each mistake and evidence using current literature how it could have been prevented. Reference your work.

Question 2 - Was the doctors request for 'point 5 of adrenaline' a valid request? (2 marks)

Argue your decision and refer to legislation

Question 3 - Was the nurse at fault for giving the adrenaline through the IV route? (3 Marks)

Argue your decision and refer to legislation

Question 4 - Describe the most likely cause of Jenny's cardiac arrest? (2 Marks)

How did you come to this conclusion? support your argument with literature

Reference List

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Airway and Breathing

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Case study

Case Study

PLEASE READ THE CASE STUDY CAREFULLY AND COMPLETE THE QUESTIONS ON THE FOLLOWING PAGES

Atsuto is an 80-year-old Japanese man who has lived in Australia for 25 years. He speaks limited English and lives with his wife and two sons. Both sons were born in Australia and attend university. Atsuto used to work at the Sydney Fish Market until his retirement some 10 years ago. Since then he has kept busy with his small garden in the inner suburb of Sydney. His enjoyments in life are talking with his sons, gardening and sitting on the front veranda smoking cigarettes. He does not drink alcohol but does smoke about one and a half packets of cigarettes a day and has done so since he was 17. He was diagnosed with emphysema when he was 62 caused by his smoking. His father died from lung cancer when he was 45 years old and his mother died from coronary artery disease 15 years ago. Both of his brothers also have coronary artery disease and chronic obstructive pulmonary disease (COPD). Atsuto was diagnosed about 20 years ago with hypertension and 8 years ago with COPD.

His current medications are:

- Quinapril 40 mg b.d.
- Frusemide 20 mg b.d.
- Atorvastatin 10 mg b.d.
- Salbutamol 200 mcg every 4 hours when required.
- Prednisolone 20mg b.d

Pathophysiology

Atsuto has lately been experiencing a persistent cough throughout the day. This cough is producing large amounts of tenacious green sputum. He has also been experiencing increased breathlessness, which he has been noticing as he tries to work in the garden. His wife notices that his appetite is not what it used to be and that his clothes no longer fit very well. He is looking thinner than previously. Atsuto's sons notice this too and encourage him to go to the doctor. The oldest son, Kabuto, volunteers to go with him to act as a translator. Atsuto, his wife and Kabuto go to the doctor. Kabuto is able to translate for the doctor. They tell the doctor that Atsuto has been getting increasingly out of breath. He can't work as fast as he used to. His cough has been getting worse and producing more sputum. On examination the doctor finds the following:

- BP 155/80
- Pulse 100
- Respiration 28
- SP02 94%
- Temperature 37.8°C
- Auscultation of the chest: widespread expiratory wheeze with reduced air entry on both sides

The GP has recommended Atsuto be admitted to a respiratory ward for further assessment, CXR and continued management. Atsuto was taken to hospital by his son where he has been admitted for the past 24hrs. Following a CXR Atsuto has been diagnosed with exacerbation of COPD caused by left lower lobe pneumonia.

Question 1- (6 marks)

Discuss in detail the pathophysiology of emphysema and how this is related to COPD. How is this related this to Atsuto's current condition as described above, support your discussion with evidence from literature

Question 2 - (4 marks)

Identify the clinical manifestations of COPD presented by Atsuto. Discuss if Atsuto is having an exacerbation of COPD and justify your discussion with evidence.

Question 3 - (4 marks)

Explain the single most effective intervention to reduce the progression of COPD and why.

Question 4 - (6 marks)

What is the likely progression of Atsuto's disease and why? Discuss management strategies for Atsuto's condition and how you would evaluate the effectiveness of his treatment.

References

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Pharmacology

Atsuto has regular medications prescribed by his GP:

Quinapril 40 mg b.d.

- Frusemide 20 mg b.d.
- Atorvastatin 10 mg b.d.
- Salbutamol 200 mcg every 4 hours when required.
- Prednisolone 20mg b.d

In addition to this, since his admission to the respiratory ward he has also been prescribed the following:

Ipratropium Bromide 500mcg NEB TDS

Amoxicillin 1G IV TDS

Paracetamol 1G PO QDS

Question 1 (2 Marks)

Atsuto is has been prescribed Frusemide. Discuss the pharmacodynamics of frusemide and the indications for this medication in relation to this case.

Question 2 (3 Marks)

Discuss the indications for Paracetamol being prescribed and provide an argument as to why this should or should not be prescribed. Provide evidence for your argument including an alternative drug if indicated

Question 3 (3 Marks)

Discuss the pharmacodynamics and pharmacokinetics of amoxicillin and if it is appropriate for this patient. Provide justification for your discussion

Question 4 (2 Marks)

Choose 2 of the medications Atsuto is taking and explain, in lay terms, to Atsuto the adverse effects of these medication and when he should seek help.

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Case study

Case Study

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Rainey is a 64-year-old woman of Maori descent who has been married for 42 years and has two grown-up children. Both of Rainey's parents died when they were in their mid-60s of 'heart attacks'. Two of her four brothers have had heart attacks and have high blood pressure, and her remaining uncle has had 'two heart attacks and a stroke'. Rainey leads a sedentary life and her diet is moderately high in fat and sugar. Rainey is 162cm Tall and 105KGs. Her body mass index (BMI) is 40 and her waist measurement is 101 cm.

Rainey began experiencing central chest pain radiating to her back and neck after walking up stairs at the shopping centre. She was short of breath and sweaty and sat down clutching her chest. Her daughter was with her who called an ambulance and that arrived after 5 minutes and took her to ED

Pathophysiology

Question 1 (3 Marks)

Identify what you believe is occurring from a clinical diagnosis perspective and link your answer to the associated pathophysiological processes.

On presentation to the paramedics, Rainey's observations were:

BP 178/92

HR 128

RR 26

SP02 97%

Paramedics inserted a 12G cannula in her Right ACF, connected her to a cardiac monitor whilst constantly reassuring her and advising her of which hospital they were taking her to.

Question 2 (4 Marks)

Should the paramedics have applied supplementary oxygen? Discuss your answer and with evidence from the literature.

Question 3 (6 Marks)

On arrival at ED, Rainey was connected to the cardiac monitor, a 12 lead ECG was taken and bloods were taken for FBC, U&E, Troponin and Triglycerides. The ED team began treating Rainey with a preliminary diagnosis of ACS.

Discuss the pathophysiology of ACS and based on Rainey's presentation and underlying pathophysiology describe what the potential diagnosis/diagnoses you believe she may have.

Question 4 (4 Marks)

Discuss the pathophysiology of cardiac cell damage associated with ACS

Question 5 (3 Marks)

Identify and briefly discuss the 3 structural and functional changes that occur in myocardial infarction

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Pharmacology

When on route to ED, Rainey was administered 5mgs IV Morphine:

Question 1 - When on route to ED, Rainey was administered 5mgs IV Morphine. (2 Marks)

Discuss the pharmacodynamics of Morphine and why it was administered in this case over other analgesia

Rainey has been prescribed the following medication:

Aspirin 300mgs PO

Glyceryl Trinitrate IV infusion 50mgs/50mls at 5mcgs/min

Question 2 - Pharmacodynamics (2 Marks)

Discuss the pharmacodynamics of these two medications using evidence from the literature to support your discussion. Also, identify how you would describe to Rainey (in layman's terms) how these work on her body

Question 3 - Indications (2 Marks)

Discuss using the literature, what are the indications are for these medications and what considerations you would make in relation to Rainey's case

Question 4 - Contraindications (2 Marks)

Describe the contraindications these medications. Is there any reason why Rainey should not be on these medications? Explain why/why not. Support your conclusions with evidence from the literature

Question 5 - Adverse effects (2 Marks)

Explain to Rainey the adverse effects of this medication and when she should seek help.

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Case study

Case Study

PLEASE READ THE CASE STUDY CAREFULLY AND COMPLETE THE QUESTIONS ON THE FOLLOWING PAGES

Lydia Schwartisky is a 23-year-old woman from rural Western Australia who was involved in a head-on car incident with another car. She did not have any passengers and the driver of the other car was killed instantly. On arrival at the scene, the ambulance noted that Lydia was unconscious, had a strong pulse and even respirations, with pupils equal and reacting. Lydia was airlifted to a tertiary referral hospital in Perth. On arrival in the emergency department two hours after the incident, she was classified as ATS 1. Primary and secondary surveys were completed by the resuscitation team. These were some of their findings:

- Temperature 37°C, pulse 98, respirations 20, oxygen saturation 100%
- Incomprehensible words
- Pupils: equal (5 mm) and sluggish
- Motor: bilateral upper and lower abnormal flexion
- Eyes open to pain only

The team intubated Lydia, attached a portable ventilator, reinserted the intravenous cannula that the ambulance officers had put in, inserted a urine catheter and accompanied her to have a CT scan. The CT without contrast showed a significant right subdural haematoma (SDH), cerebral oedema and an intact C-spine.

Lydia was continually monitored in the emergency department. Blood was taken for a full blood examination, as well as for arterial blood gases. The neurosurgeon decided that an urgent craniotomy was required to evacuate the SDH. Consent for the operation was given by Lydia's parents, who were travelling to Brisbane after being told the news of their daughter's car incident. When Lydia arrived at the operating theatre, the nurse reassessed Lydia's GCS score. It had dropped to 6. There was no longer any response from Lydia. In addition her right pupil was sluggish in its response to light. A right hemicraniotomy was performed to evacuate the right subdural haematoma. This entailed the removal of a bone flap and the opening of the dura to remove the haematoma, followed by the replacement of the bone flap (Brown & Edwards 2011:1613). The operation took place within four hours of the incident. This timeliness gave Lydia the best chance of functional survival (Wilberger, Harris & Diamond 1991). An intraventricular catheter was also inserted to monitor the intracranial pressure (Brown & Edwards 2011:1595, Figure 56.8).

Pathophysiology

Question 1 (3 Marks)

Discuss the pathophysiology of a Sub Dural Haemorrhage (SDH)

Question 2 (4 Marks)

Discuss why it is important to measure intercranial pressure (ICP), justify your discussion with evidence.

Question 3 (6 Marks)

Discuss the pathophysiology relating to brain herniation including the clinical manifestations

Question 4 (4 Marks)

Describe to Lydia's parents what a normal ICP is and what the doctors mean when they discuss the possibility of brain herniation.

Question 5 (3 marks)

What angle should Lydia's head be kept at, and why - describe the pathophysiology related to this.

References

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Pharmacology

Lydia is prescribed the following medications:

- Mannitol 0.25g/kg
- Phenytoin 15mg/kg

Question 1 - (2 Marks)

Describe to Lydia's parents (in layman's terms) the Pharmacodynamics how the above 2 medications work on her body and why she is on them.

Question 2 - (2 Marks)

Discuss the pharmacokinetics of Mannitol and why it is used in patients with TBI

Question 3 - (4 Marks)

Describe the contraindications for the 2 medications Lydia has been prescribed. Discuss if there is there any reasons why Lydia should not be on these medications? Justify your answer with supporting literature.

Question 4 - (2 Marks)

As the RN caring for Lydia, what are the adverse effects you should be looking out for in Lydia, remembering she is sedated and ventilated and describe what might you see if your patient can't tell you about these adverse effects?

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