**Item ID: 19500 Short Answer**

**You are working at the Centre for Health Protection and are tasked with investigating a suspected food poisoning incident. The table below summarises data from an outbreak of gastroenteritis:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Consumption of milk** | **Have symptoms** | **No symptoms** | **Total** |
| **Yes** | **10** | **30** | **40** |
| **No** | **50** | **10** | **60** |
| **Consumption of raw vegetables** |  |  |  |
| **Yes** | **50** | **20** | **70** |
| **No** | **10** | **20** | **30** |

**(a) What are the main exposures and outcome of interest in this study? (2 marks)**

**(b) What type of study design was most likely used to investigate this outbreak? (1 mark)**

**(c) What is the appropriate effect measure to use when analysing the association between exposure and outcome in this study? (1 mark)**

**(d) Calculate (2 marks) and interpret (4 marks) the relevant ratio measures between the exposures and outcome.**

**Answer:**(a) The main exposures are consumption of raw vegetables and milk (1 mark) and main outcome is gastroenteritis (symptoms of gastroenteritis). (1 mark)

(b) Case control study (1 mark)

(c) Odds ratio (1 mark)

(d) Calculation: OR for milk consumption (10/30):(50/10)= 0.067 (1 mark)

Interpretation: people drinking milk were 0.067 times as likely (93.3 % less likely) to develop gastroenteritis as those not drinking milk (Drinking milk might be interpreted as protective against gastroenteritis). (2 marks)

Calculation: OR for raw vegetables consumption (50/20):(10/20)= 5 (1 mark)

Interpretation: people eating raw vegetables were 5 times as likely (500% more likely) than those who did not eat raw vegetables to develop gastroenteritis (Eating raw vegetables could likely be the causative agent of gastroenteritis at the party). (2 marks)

**Profile:** <transition>Integrated <system>Gastrointestinal <discipline>Community Medicine <process>Management <taxonomy>Reasoning <gender>Not Applicable <ageGroup>Not Applicable <affiliation>The University of Hong Kong <specialty>Core (Medium) <Status>Supplementary <Originating Dept.>Community Medicine <Level/Program>6-2 <MeSH 1>Liver <MeSH 2>Histology

**Last Use Statistics:** Examination Year: 2017/Jul

Examination used for Level: 6-2 At: The University of Hong Kong

Difficulty Level: 68 Discrimination Index: Biserial:

Number in Group: 25 Test #: Question #: 16

Percentage Of Group in Qunitile:

**Second Last Use Statistics:** N/A

**Background Info.:**

written by Dr Marianne Holm (Jan 2016)

**End-of-Item**

**Item ID: 26268 Short Answer**

**A 62-year-old lady had a fall and fractured her left neck of femur. She received orthopaedic surgical fixation with a dynamic hip screw. Three days after the surgery she complained of left calf pain and swelling. Physical examination showed that her left calf was swollen up to the knee and warm to touch. Her peripheral pulses were readily palpable.**

**(a) What is the MOST LIKELY diagnosis? (1 mark)**

**(b) What would be the investigation of choice to confirm your diagnosis? (1 mark)**

**(c) Name three abnormalities in the investigation in (b). (3 marks)**

**(d) What blood tests can be helpful in confirming the diagnosis? (1 mark)**

**(e) Outline the initial steps of management in this patient. (3 marks)**

**(f) Name one long-term complication which may occur in this patient after successful treatment? (1 mark)**

**Answer:**(a) Deep vein thrombosis of her left leg (1 mark)

(b) Ultrasound / duplex or doppler ultrasound of the lower limbs (1 mark)

(c) (Any THREE of the following, 1 mark each, maximum 3 marks)

Filling defects, loss of phasic variation, loss of augmentability

(d) D-dimer (1 mark)

(e) Elevation/bed rest, anticoagulation with parental heparin/LMW heparin, Oral anticoagulation with warfarin or NOAC for three to six months (3 marks)

(f) (Any ONE of the following, maximum 1 mark)

Post-thrombotic syndrome/chronic venous hypertension/chronic venous insufficiency/ chronic venous obstruction

**Profile:** <transition>Clinical <system>Cardiovascular <discipline>Surgery <process>Vascular <taxonomy>Recall <gender>Not Applicable <ageGroup>Not specified <affiliation>The University of Hong Kong <specialty>Core (Medium) <Status>Pool <Originating Dept.>Surgery <Level/Program>6-4 B <MeSH 1>Not applicable <MeSH 2>Not applicable

**Last Use Statistics:** N/A

**Second Last Use Statistics:** N/A

**Background Info.:**

Prof. SWK Cheng (Jan 2021)

Varicose veins: diseases of the veins and lymphatics; venous thrombosis

BLK B-2+3+4+5

**End-of-Item**

**Item ID: 29055 Short Answer**

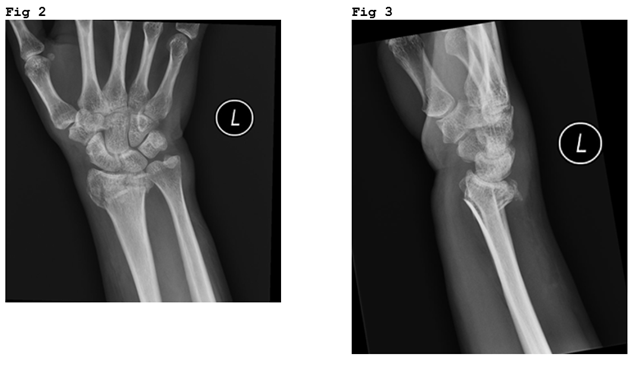
**Ms. Chan is a 64-year-old lady with good general health and can walk unaided. She attended the Accident and Emergency Department due to slip and fall injury and landed on out-stretched left hand. She complained of left wrist pain.**

**(a) Please describe the clinical photo of this patient's left wrist (Fig 1). (1 mark)**

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**(b) What specifically would you look for during physical examination? (2 marks)**

**(c) Please describe the X-ray? (Fig 2 and Fig 3) (3 marks)**

****

**(d) What is your initial management of this injury in the Accident and Emergency Department? (3 marks)**

**(e) What is the potential long-term complication of this fracture? (1 mark)**

**Answer:**(a) Dinner fork deformity of the wrist (1)

(b) Any open wound (1)

Status of extensor pollicis longus / tendon movement (1)

Any finger numbness suggestive of carpal tunnel syndrome (1)

Compartment syndrome of the limb (1)

Distal vascular status (1)

[ Any 2 ]

(c) AP: distal radius fracture (1)

AP: radial shortening (1)

AP: ulna styloid fracture (1)

Lat: dorsal tilting (1)

[ Any 3 ]

(d) Haematoma block / Sedation / Local / Regional anaesthesia (1)

Close reduction (1)

Apply slab or cast, splint (1)

(e) Malunion with deformity (1)

Post-traumatic osteoarthritis (1)

Carpal tunnel syndrome (1)

[ Any 1 ]

**Profile:** <transition>Basic <system>Multi system <discipline>Diagnostic Radiology <process>Physical Examination <taxonomy>Reasoning <gender>Not Applicable <ageGroup>Not Applicable <affiliation>The University of Hong Kong <specialty>Core (Medium) <Status>Pool <Originating Dept.>Diagnostic Radiology <Level/Program>6-4 I <MeSH 1>Not applicable <MeSH 2>Not applicable

**Last Use Statistics:** N/A

**Second Last Use Statistics:** N/A

**Background Info.:**

Dr Steve MH Cheung (Jan 2023)

**End-of-Item**

**Item ID: 28907 Short Answer**

**Mrs. Chan, aged 86, was a nursing home resident who was on medication to treat her depression and an angiotensin-converting enzyme inhibitor to treat her hypertension. She felt unsteady on her feet for the past week after starting the anti-depressant medication two weeks ago and was admitted to hospital following an unwitnessed fall. Her blood pressure was normal on admission and the following data were her results:**

**Serum Na+ = 108 mmol/L (Normal = 136-148 mmol/L)**

**Serum K+ = 4.5 mmol/L (Normal = 3.6-5 mmol/L)**

**eGFR = 100 ml/min (Normal = 90-140 ml/min)**

**Serum osmolality = 250 mmol/kg (Normal = 275-300 mmol/kg)**

**Urine osmolality 250 mOsm/kg (Normal <100 mOsm/kg)**

**(a) What is this patient's diagnosis? (1 mark)**

**(b) Based on the case scenario, explain why this patient has low serum sodium level and the underlying mechanisms for this physiological change. (4 marks)**

**Answer:**(a) Syndrome of inappropriate of secretion of anti-diuretic hormone / SIADH (1 mark)

(b) SIADH leads to excessive water retention (1 mark) that dilutes the serum sodium level (1 mark); ACE inhibitor reduces aldosterone level (1 mark), hence increases the excretion of sodium in urine. (1 mark)

**Profile:** <transition>Integrated <system>Genitourinary <discipline>Physiology <process>Systemic <taxonomy>Affect <gender>Not specified <ageGroup>Not specified <affiliation>The University of Hong Kong <specialty>Advanced (Medium) <Status>Supplementary <Originating Dept.>Physiology <Level/Program>6-1 <MeSH 1>Not applicable <MeSH 2>Not applicable

**Last Use Statistics:** Examination Year: 2023/Jul

Examination used for Level: 6-1 At: The University of Hong Kong

Difficulty Level: 0 Discrimination Index: Biserial:

Number in Group: 9 Test #: Question #: 30

Percentage Of Group in Qunitile:

**Second Last Use Statistics:** N/A

**Background Info.:**

Jessica Chu (Jan 2023)

CPR40-LO2; CPR-PHYS-P6-LO2

Describe the structure and explain the function of the components of the respiratory system, cardiovascular system and urinary system.

Demonstrate a basic understanding of the key concepts and terminology in anatomy, behavioural science, biochemistry, public health, microbiology, pathology, pharmacology and physiology that are relevant to the respiratory system, cardiovascular system and urinary system.

Describe and explain the mechanisms of common disease processes that affect the respiratory system, cardiovascular system and urinary system.

**End-of-Item**

**Item ID: 28909 Short Answer**

**Saliva is produced and secreted by the salivary glands of the body. These glands are under control of the autonomic nervous system.**

**Describe how acetylcholine is involved in primary saliva production in the acinar cells. (5 marks)**

**Answer:**• Acetylcholine binds to M3 muscarinic receptor on the acinar cells (1 mark) to induce increase in intracellular calcium level (1 mark). This would stimulate Ca2+-activated chloride channels on the apical membrane (1 mark).

• Movement of Cl- lead to paracellular transport of Na+ into the luminal side via tight junctions (1 mark), hence water into the lumen to form isotonic saliva. (1 mark)

**Profile:** <transition>Basic <system>Head & Neck <discipline>Physiology <process>Not Applicable <taxonomy>Recall <gender>Not specified <ageGroup>Not specified <affiliation>The University of Hong Kong <specialty>Core (Easy) <Status>Pool <Originating Dept.>Physiology <Level/Program>6-2 <MeSH 1>Not applicable <MeSH 2>Not applicable

**Last Use Statistics:** N/A

**Second Last Use Statistics:** N/A

**Background Info.:**

Jessica Chu (Jan 2023)

HNS26(i) & (ii) -LO3

Describe the structure and function of the head and neck system.

Describe the basic anatomy and physiology of the brain, spinal cord, sensory and motor systems, and the biochemical aspects of neurotransmission.

**End-of-Item**