

## SACT Prescription Verification Multiple Choice Question (MCQ) Test

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**This is an open book test – you can have access to all the necessary resources available in your department. This may include local trust intranet systems and policies, national and regional guidelines from bodies such as NHSE, NICE, NPSA, etc. It must be completed independently.**

**You will have a maximum of 1 hour to complete this test.**

**Please complete Section A and Section B. In Section B, please complete 2 out of the 3 case studies.**

### Section A

**Select one answer only from the following (except question 10).**

- 1) The NPSA Rapid Response Report *Risks of incorrect dosing of oral anti-cancer medicines* (Jan 2008) makes the following recommendations for reducing the risk of dosing errors with oral anti-cancer medicines:
  - a) Oral anti-cancer medicines should be prescribed in the context of written protocols and treatment plans
  - b) Treatment should be initiated by a cancer specialist
  - c) Patient should receive both written and verbal instructions and be fully informed about their oral anti-cancer therapy
  - d) All of the above
  - e) None of the above
- 2) Which one of the following formulae is commonly used to calculate the BSA for adult patients receiving chemotherapy?
  - a) Calvert
  - b) Cockcroft
  - c) Dubois
  - d) Jelliffe
  - e) Wright
- 3) Which of the following combination of tests should be routinely checked by an oncology pharmacist when verifying chemotherapy prescriptions?
  - a) FBC, LFT
  - b) FBC, tumour markers, biomarkers
  - c) FBC, LFT, renal profile
  - d) FBC, bone profile, coagulation screen
  - e) LFT, renal profile

- 4) Which of the following combination of results before chemotherapy would indicate that chemotherapy can be administered to a patient without further tests, dose reductions or delays?
- a) ANC  $4.0 \times 10^9/L$ ; platelets  $65 \times 10^9/L$ ; bilirubin  $18 \mu\text{mol}/L$ ; AST  $20 \text{iu}/L$ ;
  - b) ANC  $3.3 \times 10^9/L$ ; platelets  $300 \times 10^9/L$ ; Hb  $6.5 \text{g}/L$ ; GFR  $55 \text{mL}/\text{min}$ ;
  - c) ANC  $0.8 \times 10^9/L$ ; platelets  $100 \times 10^9/L$ ; Sr creatinine  $160 \mu\text{mol}/L$ ; bilirubin  $25 \mu\text{mol}/L$
  - d) ANC  $1.7 \times 10^9/L$ ; platelets  $225 \times 10^9/L$ ; GFR  $80 \text{mL}/\text{min}$ ; AST  $25 \text{iu}/L$ ; bilirubin  $12 \mu\text{mol}/L$
  - e) ANC  $1.2 \times 10^9/L$ ; platelets  $260 \times 10^9/L$ ; GFR  $25 \text{mL}/\text{min}$ ; AST  $55 \text{iu}/L$ ; bilirubin  $52 \mu\text{mol}/L$
- 5) Which of the following combinations of anti-emetic drugs is commonly prescribed for limiting nausea and vomiting after a highly emetogenic regimen which includes high dose cisplatin ( $>50 \text{mg}/\text{m}^2$ )?
- a) Domperidone prn
  - b) Domperidone and dexamethasone
  - c) Aprepitant, dexamethasone, ondansetron and domperidone
  - d) Aprepitant, ondansetron and domperidone
  - e) Dexamethasone and aprepitant
- 6) What does a colorectal patient being treated with cetuximab need to be tested for before administration?
- a) EGFR and BRAF status
  - b) HER 2 and CD20 status
  - c) KRAS and NRAS status
  - d) BRAF and NRAS status
  - e) CD20 status
- 7) Which of the following statements about GCSF products is not true?
- a) GCSF may be given to patients before chemotherapy in some circumstances
  - b) Daily GCSF is administered on all the days between cycles
  - c) Pegfilgrastim is usually given to patients 24 hours after chemotherapy
  - d) Biosimilar GCSF products are available for use in the UK
  - e) GCSF can be prescribed for patients as secondary prophylaxis for some regimens
- 8) Which one of the following is not essential to check for when you are verifying a prescription for single agent bevacizumab?
- a) any recent major surgery within the last 28 days
  - b) the hypertension profile of the patient
  - c) current renal function status
  - d) a urine analysis test for proteinuria levels
  - e) allergy status

9) Which one of the following drugs does not have a pregnancy prevention program recommended by the manufacturers?

- a) Thalidomide Celgene®
- b) Revlimid®
- c) Erivedge®
- d) Imnovid®
- e) Iressa®

10) Personalised care and treatment of NSCL lung cancer patients. Match the biomarker to the treatment

Treatment	Answer	Biomarker
a. Pembrolizumab		A. EGFR mutation +ve
b. Osimertinib		B. PD-LI ≥ 50%
c. Erlotinib		C. ALK +ve
d. Crizotinib		D. A EGFR exon 19
e. Afatinib		E. EGFR T790M +ve

## Section B

### Colorectal Case Study 1

**In this case study, select one answer only from the following questions**

A 58 year old male patient, Mr XC, has been prescribed a XELOX regimen (also known as Cape/Ox, consisting of oxaliplatin and capecitabine) and you are going through his medication to go home with. He reveals the drugs which he is currently taking: metoprolol 50mg bd; ramipril 5mg od; allopurinol 300mg daily; Maalox<sup>®</sup> 10mls tds; warfarin 3mgs daily; simvastatin 20mg nocte.

His height is 180cm and weight is 80kg; WBC= 5.6, ANC= 2.3, SrCr= 75µmol/L; bilirubin= 12mmol/l.

1) What is the BSA of Mr XC using the Dubois method?

- a) 1.66m<sup>2</sup>
- b) 1.75m<sup>2</sup>
- c) 1.86m<sup>2</sup>
- d) 1.97m<sup>2</sup>
- e) 2.00m<sup>2</sup>

2) What is the correct dose and duration of his capecitabine tablets?

- a) 1000mg twice a day for 14 days every 14 days
- b) 1300mg twice a day for 21 days every 21 days
- c) 1300mg twice a day for 14 days every 21 days
- d) 2000mg twice a day for 14 days every 21 days
- e) 2000mg twice a day for 21 days every 21 days

3) Which of the following combination of preparations that he is on may need reviewing as they may have a significant interaction with the capecitabine?

- a) Ramipril and allopurinol
- b) Metoprolol, simvastatin and Maalox<sup>®</sup>
- c) Allopurinol, warfarin and Maalox<sup>®</sup>
- d) Ramipril, allopurinol, simvastatin and warfarin
- e) Warfarin only

4) Mr XC comments that the capecitabine tablets are too large to swallow and asks you how to take them. Which of the following options would you recommend?

- a) Still have to swallow them whole, and take one hour before food
- b) May crush them up, transfer to a glass of water and swallow immediately, on an empty stomach
- c) Allow to disperse in half a glass of water and take within 30 minutes before food
- d) Allow to disperse in half a glass of water and take within 30 minutes after food
- e) Cut the tablets in half with a tablet cutter and take them within 30minutes after food

- 5) Mr XC goes home after chemotherapy on Day 1. On Day 9 he phones the pharmacy at 4pm and asks you what to do because he has missed his morning dose of capecitabine. As well as asking him to inform the doctor at the next visit, you advise him to
- a) Take the morning dose with the evening dose
  - b) Take the morning dose immediately and the evening dose as normal
  - c) Omit the evening dose today and continue as normal tomorrow
  - d) Omit the morning dose and take the evening dose as normal
  - e) Talk to the clinician who prescribed him the chemotherapy
- 6) On day 15, Mr XC phones you again at 12 noon to say that he has run out of tablets and is not sure about when to get more supply. What should you do next?
- a) Reassure him that he has completed his course and he does not need any further tablets for this cycle
  - b) Confirm the dose he has been taking, look at pharmacy and prescription records, and then call him back to reassure him that there isn't a problem and he will be given a further supply from the hospital at his next cycle
  - c) Confirm the dose he has been taking, look at pharmacy and prescription records, and then call him back to reassure him that there isn't a problem and he get some more from his GP who can prescribe some more
  - d) Confirm the dose he has been taking, look at pharmacy records, and then tell him to return to the hospital pharmacy tomorrow as he may need further supply
  - e) Confirm the dose he has been taking, look at pharmacy records, and then call him to return to the hospital pharmacy immediately as he will need further supply.
- 7) Mr XC comes back on the ward for cycle 2 and his serum creatinine rises to 130 $\mu$ mol/L. What should his recommended doses be on cycle 2?
- a) reduce capecitabine and oxaliplatin by 25%
  - b) leave capecitabine and oxaliplatin at 100%
  - c) reduce capecitabine by 25% and leave oxaliplatin at 100%
  - d) leave capecitabine at 100% and reduce oxaliplatin by 25%
  - e) leave capecitabine at 100% and omit oxaliplatin

## Non-Small Cell Lung Cancer (NSCLC) Case Study 2

In this case study, select one answer only from the following questions

In January 2019 Mr Jim Robinson was diagnosed with stage IV NSCLC (adenocarcinoma).

NSCLC History:

- 56 year old male patient, PS 1
- **Jan 2019:** PET: RUL tumour invading ribs, chest wall and vertebral body. Staging T4N3M1. Received palliative radiotherapy to spine.
- **Feb 2019:** EGFR and ALK negative, PD-L1 positive TPS 60%
- **Feb 2019:** Commenced 1st line pembrolizumab

1) What is the mode of action for pembrolizumab?

- a) Binds to the programmed death-2 receptor and blocks its interaction with PD-L1 and PD-L2
- b) Binds to CTLA-4 and blocks its interaction with CD80/CD86 ligand
- c) Binds to programmed death ligand 1 and blocks the interaction with PD-L1 and PD-L2
- d) Binds to the programmed death-1 receptor and blocks its interaction with PD-L1 and PD-L2
- e) Binds to LAG-3 to and blocks it interaction with major histocompatibility factor II

2) What test would you not require prior to pharmacy confirmation of pembrolizumab treatment?

- a) Full blood count
- b) Pulmonary function test
- c) Liver function test
- d) Thyroid function test
- e) Urea and electrolytes

3) What should patients receive prior to starting treatment with pembrolizumab?

- a) Keytruda Patient Alert Card
- b) Dental check-up
- c) Measure height and weight
- d) Counselling on risk of febrile neutropenia
- e) Anti-emetics

4) Post cycle 3 of pembrolizumab, Mr Robinson developed Grade 2 diarrhoea. What is the correct treatment option for a patient who develops symptoms of 4 to 6 liquid stools over baseline (according to ESMO 2017 guidelines)?

- a) IV methylprednisolone 0.5-1mg/Kg
- b) IV methylprednisolone 1-2mg/Kg
- c) IV dexamethasone 0.5-1mg/Kg
- d) Oral prednisolone 0.5-1mg/Kg
- e) Oral prednisolone 1-2mg/Kg

5) At Mr Robinson's weekly follow-up appointment, to manage the diarrhoea the doctor had to increase his steroidal dose. At what point would you advise the clinical team to start prophylaxis for *pneumocystis jiroveci pneumonia* (PJP)?

- a) When steroidal dose is  $\geq 50$  mg prednisolone or equivalent  $\geq 4$  weeks is planned
- b) When steroidal dose is  $\geq 25$  mg prednisolone or equivalent  $\geq 2$  weeks is planned
- c) When steroidal dose is  $\geq 25$  mg prednisolone or equivalent  $\geq 4$  weeks is planned
- d) When steroidal dose is  $\geq 15$  mg prednisolone or equivalent  $\geq 2$  weeks is planned
- e) When steroidal dose is  $\geq 15$  mg prednisolone or equivalent  $\geq 4$  weeks is planned

6) If Mr Robinson had developed Grade 3 diarrhoea and the gastroenterology team decided that another form of immunosuppression would be needed to control symptoms, which immunosuppression would most likely be selected if no contra-indications?

- a) Cyclosporin
- b) Infliximab
- c) Mycophenolate mofetil
- d) Tacrolimus
- e) Vedolizumab

7) Nine weeks after the last pembrolizumab dose, the symptoms resolve and the prednisolone dose has been weaned down to 5mg daily. What would be the most likely treatment option for Mr Robinson?

- a) Restart treatment with pembrolizumab as there has been tumour progression
- b) Restart treatment with pembrolizumab as there has been stable disease
- c) No further treatment
- d) Switch to erlotinib
- e) Switch to atezolizumab

### Multiple Myeloma Case Study 3

Mr AB, DOB: 07/09/1940

#### Diagnosis

IgA kappa multiple myeloma

#### Medical history

Initial therapy with 9 cycles CTDA (complicated by thalidomide-related peripheral neuropathy)

Suboptimal response to VCD

Biochemical progression LCD

Switched to pomalidomide/dexamethasone

Dalteparin related injection site anterior abdominal wall soft tissue infection/abscess requiring therapy interruption; switched to apixaban

#### At the clinic visit

Weight 77.2kg

White blood cells 2.7, neutrophils 1.2, lymphocytes 0.7, haemoglobin 10.3, platelets 183, ESR 63, CRP 7.5, creatinine 111, eGFR 58, sodium 142, potassium 3.8, calcium adjusted 2.44, bilirubin 19, alkaline phosphatase 67, ALT 19, albumin 43, bilirubin 19, LDH 201, ferritin 155.

#### Treatment plan

Pomalidomide 4 mg for 21 of 28 day cycle, Dexamethasone 10 mg weekly and Clarithromycin 250 mg twice a day

Also to start apixaban, adcal D3 and bisphosphonate

1) Match the mode of action to the drug

Drug name	Answer	Mode of action
a) Cyclophosphamide		A. IgG1κ human monoclonal antibody (mAb) that binds to CD38
b) Bortezomib		B. Alkylating agent
c) Pomalidomide		C. Histone deacetylase (HDAC) inhibitor
d) Daratumumab		D. Immunomodulatory agent
e) Panobinostat		E. Proteasome inhibitor

2) Choose the forms that need to be completed before EACH pomalidomide dispensing (select all that apply)

- a) Treatment Initiation Form
- b) Prescription Authorisation Form
- c) Patient Pocket Information Card
- d) VTE risk assessment
- e) Pregnancy Prevention Programme pharmacy registration form

3) Pomalidomide caused the following side effects (select all that apply)

- a) Neutropenia
- b) Thrombocytopenia
- c) Neuropathy
- d) Thrombotic risk
- e) Somnolence

4) The clinical features of multiple myeloma include (select all that apply)

- a) Renal impairment
- b) Hypercalcaemia
- c) Anaemia
- d) Recurrent infections
- e) Headache

5) Thalidomide, lenalidomide and pomalidomide are all teratogenic drugs. Which one of the following statements is false? (select one)

- a) A prescription authorisation form (PAF) must accompany each prescription for all 3 drugs
- b) A maximum of 4 weeks supply can be issued of these drugs at any one time to a woman of child bearing potential.
- c) Dispensing must take place within 7 days of the date of prescribing for all 3 drugs.
- d) Pregnancy testing must take place within 7 days of the date of dispensing for all 3 drugs.
- e) Patients starting treatment must sign a treatment initiation form