Pharmaceutical care of stroke patients

Course activities
Pharmaceutical care of stroke patients

Course activities

page
2  Case Study 1
4  Case Study 2
6  Case Study 3
8  Multiple Choice Questionnaire
Case Study 1

Mr Ferguson’s wife comes in with a prescription for a seven day course of clarithromycin 500mg twice a day and for simvastatin 40mg at night. Mr Ferguson had a stroke four months ago and was in the acute stroke unit at the local hospital for two weeks followed by a period in the rehabilitation unit.

Your records show that he was started on warfarin for atrial fibrillation after his stroke. His INR has been stable for five weeks. The last time simvastatin was dispensed, the dose was 20mg at night.

His other current medicines are:
Aspirin 75mg daily
Dipyridamole MR 200mg twice a day
Lisinopril 5mg daily
Omeprazole 20mg daily
Discussion points – Case Study 1

What care issues have you identified for this patient?

What advice would you offer?

What would you prescribe or what recommendations would you make about this patient to their GP?
Case Study 2

The local nursing home weekly prescriptions arrive in the pharmacy. One of the patients is on:
Digoxin tablets 125micrograms in the morning
Phenytoin capsules 300mg daily
Aspirin EC tablets 75mg in the morning
Dipyridamole MR capsules 200mg twice daily

The nursing home manager asks for these in a suitable formulation for administration via a nasogastric (NG) tube.

In particular, think about:
1. What formulations would you supply?
2. Which formulations are not suitable for administration via the NG tube?
3. Which medicine formulation requires dosage modification?
Discussion points – Case Study 2

What care issues have you identified for this patient?

What advice would you offer?

What would you prescribe or what recommendations would you make about this patient to their GP?
Case Study 3

Mr Best comes in to collect his prescription and asks why the dose of his Ramipril has been increased. He says he was feeling fine but when he was at the GP surgery, the nurse checked his blood pressure and the GP gave him the new prescription.

His records show that Mr Best is an overweight 65 year old non-insulin dependent diabetic with previous peptic ulcer who had a TIA diagnosed at the neurovascular clinic five weeks ago and was started on the following medicines:
- Clopidogrel 75mg daily
- Simvastatin 40mg

The GP was instructed to monitor Mr Best’s BP by the neurovascular clinic.

Mr Best’s other medicines are:
- Glipizide 5mg at breakfast
- Metformin 500mg twice a day
- Lansoprazole 15mg daily

In particular think about:
1. Identifying Mr Best’s risk factors for a further stroke.
2. How you would explain the reasons for the dosage increase to Mr Best?
3. What is the target BP that the GP should be aiming for?
4. What is the target HBA1c that the GP should be aiming for?
5. Is clopidogrel the most appropriate antiplatelet for Mr Best?
Discussion points – Case Study 3

What care issues have you identified for this patient?

What advice would you offer?

What would you prescribe or what recommendations would you make about this patient to their GP?
Multiple choice questionnaire.

This multiple choice questionnaire (MCQ) allows you to test your understanding. Please tick either TRUE or FALSE for each part (a to d) for each of the 20 questions on the next five pages (page 9 - 13). Tear off the answer sheet on page 15 and copy your 'ticks' onto this sheet, which you can then return to NES Pharmacy at the address below:

NHS Education for Scotland (Pharmacy)
3rd Floor, 2 Central Quay
89 Hydepark Street
Glasgow G3 8BW

Completion of this MCQ is optional to participants and you will not receive an individual score. However, successful completion of the MCQ will accrue an additional 2.5 NES CE hours. Model answers will be sent, at the end of the current education and training year, to participants who have submitted this MCQ.
Pharmaceutical care of stroke patients

1. In the categorisation of stroke:
   a. Ischaemic stroke accounts for approximately 80% of all strokes  
      □ True □ False
   b. Thrombotic strokes account for approximately 50% of ischaemic strokes
      □ True □ False
   c. Haemorrhagic strokes account for approximately 30% of all strokes
      □ True □ False
   d. Lacunar strokes account for approximately 30% of ischaemic strokes
      □ True □ False

2. Treatable risk factors for stroke include:
   a. smoking
      □ True □ False
   b. obesity
      □ True □ False
   c. family history
      □ True □ False
   d. hypertension
      □ True □ False

3. Non-treatable risk factors for stroke include:
   a. previous stroke
      □ True □ False
   b. being male
      □ True □ False
   c. raised cholesterol
      □ True □ False
   d. diabetes
      □ True □ False

4. Some of the signs or symptoms of stroke are:
   a. slurred speech
      □ True □ False
   b. weakness down one side
      □ True □ False
   c. headache
      □ True □ False
   d. hypothermia
      □ True □ False

5. With regard to signs and symptoms of stroke:
   a. Speech is likely to be affected if the stroke occurs in the left cerebral hemisphere
      □ True □ False
   b. Balance will be affected if the stroke occurs in the cerebellum
      □ True □ False
   c. Brain stem stroke is likely to affect respiration and alertness
      □ True □ False
   d. Emotion will be affected by a stroke in the cerebellum
      □ True □ False
6. With regard to secondary prevention of ischaemic stroke:
   a. stopping smoking reduces the risk of stroke by approximately 80%  □ True □ False
   b. antiplatelet therapy decreases the relative risk of vascular events by approximately 25%  □ True □ False
   c. stopping smoking reduces the risk of stroke by up to 50%  □ True □ False
   d. antiplatelet therapy decreases the relative risk of stroke by approximately 45%  □ True □ False

7. These medicines should be given within 48 hours of ischaemic stroke onset:
   a. Alteplase  □ True □ False
   b. Aspirin  □ True □ False
   c. Enoxaparin  □ True □ False
   d. Warfarin  □ True □ False

8. The following should be used with caution in a patient with 75% carotid stenosis:
   a. Aspirin  □ True □ False
   b. Clopidogrel  □ True □ False
   c. Dipyridamole  □ True □ False
   d. Antihypertensives  □ True □ False

9. The first line choice of antiplatelets for secondary prevention of ischaemic stroke is:
   a. Aspirin alone  □ True □ False
   b. Aspirin and Clopidogrel  □ True □ False
   c. Aspirin and Dipyridamole MR  □ True □ False
   d. Clopidogrel alone  □ True □ False
10. The following doses are recommended doses for antiplatelets used in secondary prevention of ischaemic stroke after the first 24 hours:
   a. Aspirin 300mg daily for 14 days then 75mg daily □ True □ False
   b. Clopidogrel 75mg daily □ True □ False
   c. Dipyridamole 100mg three times a day □ True □ False
   d. Dipyridamole Modified Release 200mg twice a day □ True □ False

11. Some of the side effects associated with dipyridamole are:
   a. Nausea/vomiting □ True □ False
   b. Taste disturbance □ True □ False
   c. Can worsen angina □ True □ False
   d. Headache □ True □ False

12. Which of the following is true/false?
   a. Statins should be discontinued if the ALT liver function test is more than three times the upper limit of normal □ True □ False
   b. Myopathy is a side effect of statins □ True □ False
   c. Simvastatin is contraindicated if warfarin is to be prescribed □ True □ False
   d. Liver function tests should be taken before starting a statin and within 12 weeks of starting therapy □ True □ False

13. Warfarin is indicated post ischaemic stroke in patients:
   a. with non-cardioembolic stroke □ True □ False
   b. with atrial fibrillation and over 80 years old □ True □ False
   c. with atrial fibrillation □ True □ False
   d. with a cardiac embolus □ True □ False
14. The PROGRESS trial:
   a showed that lowering blood pressure reduced recurrent stroke incidence □ True □ False
   b used a thiazide diuretic and an ACE inhibitor to lower blood pressure □ True □ False
   c showed a reduction in recurrent stroke even in normotensive patients □ True □ False
   d was a randomised clinical trial □ True □ False

15. The following are the clinical targets to be aimed at post stroke:
   a Target blood pressure in a diabetic is 140/80 mm Hg □ True □ False
   b Target blood pressure in a diabetic is 130/85 mmHg □ True □ False
   c Target blood pressure is 140/85 mmHg □ True □ False
   d Target blood pressure is 130/80 mm Hg □ True □ False

16. With regard to stroke secondary prevention medicines:
   a Warfarin interacts with simvastatin but not atorvastatin □ True □ False
   b Warfarin interacts with atorvastatin but not simvastatin □ True □ False
   c Digoxin interacts with simvastatin but not atorvastatin □ True □ False
   d Digoxin interacts with atorvastatin but not simvastatin □ True □ False

17. Dysphagia is:
   a absence of swallow □ True □ False
   b difficulty swallowing □ True □ False
   c difficulty speaking □ True □ False
   d absence of speech □ True □ False
18. The following formulations should NOT be administered to patients at risk of aspiration:
   a tablets □ True □ False
   b liquids □ True □ False
   c capsules □ True □ False
   d suspensions □ True □ False

19. The modified Rankin scale (mRS) is a tool to:
   a identify individuals at high risk of stroke after TIA □ True □ False
   b help diagnose if a patient has had a stroke □ True □ False
   c categorise functional outcome after stroke □ True □ False
   d record level of disability □ True □ False

20. The following advice should be given to patients to prevent stroke:
   a stop smoking □ True □ False
   b take vitamin supplements □ True □ False
   c if overweight, recommend weight loss □ True □ False
   d increase fruit and vegetable consumption □ True □ False
### Pharmaceutical care of stroke patients:
**MCQ answer sheet**

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
<th>12.</th>
<th>13.</th>
<th>14.</th>
<th>15.</th>
<th>16.</th>
<th>17.</th>
<th>18.</th>
<th>19.</th>
<th>20.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>a</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

T = True   F = False