Amended 2010

Pharmaceutical care of stroke patients

Course information
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Contents of pack

Your pack contains:
- Pharmaceutical care of stroke patients – Course information
- Pharmaceutical care of stroke patients – Course activities
- Set of pharmaceutical care needs assessment tools for stroke (10)
- The DVD with Anne Kinnear’s presentation (in 16:9 PAL format). This DVD will play in almost any DVD player, and any PC or Mac with DVD playing software.
- Order form for The Stroke Association leaflets/posters.

Acknowledgements

This pack was brought together with the help of Anne Kinnear (NHS Lothian). Special thanks also to Marjory Anderson (NHS Greater Glasgow & Clyde) and Dr Andrew Coull (Consultant Physician, Medicine of the Elderly, NHS Lothian), who were reviewers of the pack.

Disclaimer

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Introduction

This course offers Scottish pharmacists training on how they can contribute to the care of people who have had a stroke, as part of their normal working practice, by applying the principles of pharmaceutical care for patients with chronic diseases. This invaluable training for community pharmacists will help prepare them for the future and should link with previous NES Core Course materials.

The evening will start with a lecture on stroke – mainly covering the disease, its risk factors, diagnosis, acute management and secondary prevention. This will be delivered by a local expert in the field and will explore the aims of treatment and review the various clinical management options for the disease. The workshops will include very practical patient case studies followed by a group discussion on ways to improve care.

The course will be of interest to pharmacists working in both sectors of care in order to help with integrated seamless care and will provide a useful CPD opportunity on the current recommendations for the management of stroke.

Aim

To update pharmacists on stroke – the disease and its management, and explore ways to implement pharmaceutical care for this patient group as part of normal working practice.

Objectives

At the end of the session pharmacists will be able to:

- describe the disease, identify risk factors and common signs, and the symptoms associated with stroke.
- define the current therapeutic management of acute stroke and secondary prevention measures.
- identify pharmaceutical care issues and respond to symptoms in patient scenarios and identify appropriate management solutions.
- explore how to implement the principles of a pharmaceutical care needs assessment tool in practice.

Pre-course reading (included in this pack)


Available at http://dx.doi.org/10.1016/S0140-6736(08)60694-7

(You will require an ATHENS username and password to access this. If you do not yet have an ATHENS account for the e-library then please follow the instructions below).

The instructions to register for an ATHENS account are below:

You can self-register for an ATHENS account. Please go to the e-Library homepage (http://www.elib.scot.nhs.uk) and click on the ‘login/register’ link at the top of the page. You can then follow the process through to apply for a NHS Education for Scotland ATHENS account. Applications made from a PC on NHS premises normally receive account details the same day, those from outside the NHS network have to be verified, and so may take up to one week. In both cases, the account will not be recognised by the e-Library until the working day following the account creation, but access to subscription resources such as electronic journals and databases should be available shortly after the account details are received.

- Pharmaceutical care needs assessment (PCNA) tool
- Aide Memoire for PCNA tool

In addition, it is recommended that, before coming along to the course, you update yourself on any local guidelines that exist within your NHS Board for the treatment and prevention of stroke.
Background
The World Health Organisation (WHO) definition of stroke is ‘A neurological deficit (usually loss of function) caused by reduction in blood supply to the brain. This is usually because a blood vessel bursts or is blocked by a clot. This affects the supply of oxygen and nutrients, causing damage to the brain tissue’.

The Chest, Heart & Stroke Scotland Charity (CHSS) define stroke as a ‘brain attack’. As with a heart attack, a brain attack is a medical emergency as ‘time is brain’.

The FAST tool is a simple, accurate diagnostic tool that anyone can use to improve the speed and accuracy of diagnosis in patients with suspected stroke:

- Facial weakness - can the person smile? Has their mouth or eye drooped?
- Arm weakness - can the person raise both arms?
- Speech problems - can the person speak clearly and understand what you say?
- Test - requires an assessment of the three specific symptoms of stroke.

If a person fails any of the three, a stroke is suspected and it is essential to call ‘999’ and admit the patient to a specialised stroke unit within a hospital, as soon as possible in order to receive appropriate treatment to reduce ‘brain lost’ with associated resultant disabling symptoms.

A stroke is termed ischaemic if caused by a clot and haemorrhagic if caused by a burst blood vessel. Approximately 80% of strokes are ischaemic and 20% haemorrhagic. Evidence for medical treatment is mainly for the secondary prevention of ischaemic stroke; treatment for haemorrhagic stroke being, in the main, surgical. The evidence for primary prevention treatments is currently lacking.

Antiplatelet therapy, statins, warfarin for atrial fibrillation and control of blood pressure and diabetes and are the main treatment options; the evidence for the use of which will be covered in the presentation.

Implementing the pharmaceutical care needs assessment tool
A Pharmaceutical Care Needs Assessment (PCNA) tool for stroke has been developed to help pharmacists apply their learning, develop their assessment skills, help their patients get the most out of their medication and reduce any associated risks. It incorporates a simple assessment and follows the same systematic inquiry as the other chronic condition PCNA tools in the previous NES Core Courses.

By suggesting questions that will allow you to confirm the person’s understanding of their condition, information will also arise regarding how their medication works, its effectiveness (sub optimal dose or additional medication required), safety (adverse drug reactions, interactions or toxicity) and intentional or non-intentional non compliance.

As people present with their prescriptions for medication used in the treatment of stroke, the pharmacist should confirm their diagnosis, and as part of the normal clinical check and counselling process should ask if they would like to answer some more in-depth questions about their condition. This will help to ensure that they are getting the best from their medication and that they are not at risk of any adverse effects.

You can then work through the PCNA tool as a single intervention or it can be completed as the person visits the pharmacy with a repeat prescription over subsequent weeks or months.

The PCNA tool has been designed with direct patient contact in mind and will help pharmacists to speak with patients in a more systematic and focused way. You can adapt the questions to your own style and the needs of your patients. Use it in conjunction with your computerised pharmacy medication records to identify patients you would like to actively target.
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The aide memoire suggests ways to optimise information provision and drug treatment by summarising key points to help pharmacists support and advise the patient or carer and suggests when it may be appropriate to refer to their GP or nurse.

Using this PCNA tool will help you to further develop your patient assessment skills and more therapeutic relationships with your patients and medical and nursing colleagues.

The validated questions for stroke relevant for identifying and monitoring of pharmaceutical care issues are:

- Is the patient on the appropriate stroke secondary prevention medicines for time period post stroke and at correct doses for time period post stroke?
- Is the patient receiving the correct monitoring and tests at appropriate time intervals with the aim of meeting appropriate clinical targets and standards for:
  - Blood pressure
  - Diabetic control
  - Statin monitoring
  - Warfarin monitoring
  - Mood assessment and are medicine doses being titrated accordingly?
- As a result of the stroke, what disabilities are present that make it difficult or impossible to physically use or take prescribed medicines?

One of the tools used to record functional outcome after stroke based upon the extent of disability or disabling symptoms experienced by the patient is called the:

**Modified Rankin Scale (mRS)**

<table>
<thead>
<tr>
<th>Score</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No symptoms</td>
</tr>
<tr>
<td>1</td>
<td>No significant disabling symptoms</td>
</tr>
<tr>
<td>2</td>
<td>Slight disability</td>
</tr>
<tr>
<td>3</td>
<td>Moderate disability</td>
</tr>
<tr>
<td>4</td>
<td>Moderate/severe disability</td>
</tr>
<tr>
<td>5</td>
<td>Severe disability</td>
</tr>
<tr>
<td>6</td>
<td>Dead</td>
</tr>
</tbody>
</table>

It is likely that there will be more pharmaceutical care issues in those patients with disabilities with mRS scores 3-5 with regard to ability to manage medicines administration and the use of devices. Carers may therefore be the key contact and target for counselling and support.
Teaching plan

Lecture
40 minutes and 10 minutes discussion.
Stroke
This talk will cover:
- definition and pathophysiology of the disease
- risk factors
- diagnosis
- acute management
- secondary prevention

Comfort break
15 minutes

Workshops
60 minutes.

Training groups should be divided into groups of between 12 and 15 participants. One facilitator should be assigned to each group – each group will work through the cases as directed and attempt to complete the PCNA tool for each case as they go along.

Questions/discussion/answers
10 minutes in large groups.
Suggested discussion points will be provided at the end of the session.

Summary
10 minutes
- CPD-action (recording), evaluation and identification of further training needs
- Using the spare assessment tools to explore how to implement the tool in practice
- Local services and support for stroke patients
- Course assessment

Useful reference sources
The Lancet seminar paper on stroke is a detailed article but is currently the most up to date general review of stroke. Two papers from the Hospital Pharmacist from 2002 referenced below are easier to read and make quick reference to but are out of date in places and this should be borne in mind.

Note that updated SIGN Guideline 108 ‘Management of patients with stroke or TIA: assessment, investigation, immediate management and secondary prevention’ was published in December 2008. NICE Guidelines and European Guidelines on Stroke were also published in 2008.

There is a new website available which aims to provide an interactive way of learning about stroke with quizzes, animations, video clips and case scenarios. Learners can print off a Personal Learning Log detailing the competencies they have completed. There is also a more advanced assessment at the end of the resource which the learner may opt to undertake and which, if passed, gives a higher level of certificate.

This resource is free and can be accessed on http://www.strokecorecompetencies.org
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Additional references

Useful contacts
Chest, Heart & Stroke Scotland (CHSS)
65 North Castle Street
Edinburgh EH2 3LT
Tel: 0131 225 6963
Advice Line: 0845 077 6000
www.chss.org.uk

Different Strokes (Scotland)
53 Elmore Ave
Glasgow G44 5BH
Tel: 0141 569 3200
www.differentstrokes.co.uk

The Stroke Association
240 City Road
London EC1V 2PR
Tel: 020 7566 0300

National Stroke Helpline:
0845 30 33 100

Stroke Association (Scotland)
Links House
15 Links Place
Edinburgh EH6 7EZ
Tel: 0131 555 7240

(Publications order form included in the pack for leaflets and posters you may wish to display in your pharmacy)

Carers UK
Vocal – carers support
http://www.vocal.org.uk
Aide Memoire – Stroke

1 Can you tell me what medical condition(s) you have? Or have had? 
This helps to clarify understanding of their condition(s). It is important for stroke patients to understand that although their stroke was an event, stroke is a disease and secondary prevention is lifelong. Conditions such as hypertension and diabetes may have been newly diagnosed following a stroke and other conditions such as atrial fibrillation may have developed after the stroke. Patients have differing degrees of resultant disability and carers may be the visitors to the pharmacy and may be the key contact.

Stroke patients and their carers are provided with lots of support and information at initial diagnosis – the amount of information and support received at diagnosis will vary and may depend on whether time was spent and the length of time spent in a specialist stroke unit during the acute and rehabilitation phases and the amount of contact with specialist staff. Over time people can forget key information or the messages may change over time.

Action 
Note answer and offer patient general information on conditions.

2 What is/are the name(s) of the medication you take for your condition(s) and how do you take it/them? 
Check with prescription and patient medication records. Stroke secondary prevention medicines do not treat obvious resultant symptoms and patients may not understand that treatment is lifelong and should be continued even if they have made a good functional recovery from the stroke. Doses and medicines may change post stroke and it is important that the patient understands when and why these changes are necessary.

Action 
Note how person takes medication and offer appropriate advice.

3 Do you ever forget or choose not to take your medication? 
If yes, how often – weekly/monthly? 
Clarify which drugs are missed and when.

Action 
Offer appropriate verbal advice depending on response.

4 Do you know what to do if you have missed a dose of your medication? 
Document response. 
This may be particularly relevant for patients who are on warfarin for atrial fibrillation post stroke.

Action 
Offer appropriate verbal advice depending on response.

5 What, if any, side effects do you think you are experiencing from your medication? 
Some people erroneously link medication to adverse effects and this can affect their adherence to their regimen. It is important to be aware of side effects of secondary prevention stroke medicines e.g. aspirin, dipyridamole MR, clopidogrel, statins, antihypertensives, warfarin in order to be able to identify responsible agents.

Action 
Note any adverse effects and confirm that they are as a result of their medication, and reassure the patient accordingly.
6 Do you feel that your medication is controlling your symptoms or have you noticed any changes since you started taking your medication? Do you know the trigger signs?
This question is not appropriate for stroke secondary prevention medicines but patients may have other post stroke conditions e.g. depression, continence issues for which they take medicines or other conditions associated with stroke e.g. diabetes.

Action
Offer appropriate verbal advice depending on response.

7 Do you have a regular check/blood test/review? Can you tell me when that was, and the outcome?
Document response.
E.g. for stroke patients:
  - cholesterol or LFTs while on statins
  - INR if on warfarin
  - BP if on antihypertensives
  - HbA1c if diabetic

Action
Offer appropriate verbal advice depending on response.

8 Would you like any information on anything about your condition/medication/health promotion areas?
This helps to identify any self-help or health issues.
E.g. Weight loss in the overweight, diet advice re reduction of salt intake especially if hypertensive, increase in fruit and vegetable intake.

NB. There is currently no evidence that supplemental vitamin intake (A, D, E, B or folate) prevents further stroke or reduces stroke mortality.

Action
Offer advice and support on how the person can manage their lifestyle more effectively or signpost them to other organisations.
Offer general healthy eating advice as appropriate.

9 Do you smoke? How many cigarettes do you smoke and how long have you smoked?
Stopping smoking reduces the risk of stroke by up to 50%. This is a far greater risk reduction than can be obtained by combinations of stroke secondary prevention medicines. All patients should be encouraged to stop smoking. Identify what stage they are at in the ‘cycle of change’ model.

Action
Offer appropriate support or refer to local support agency depending on local arrangements.

Specific stroke questions:

10 Is the patient on the appropriate stroke secondary prevention medicines for time period post stroke and at correct doses for time period post stroke?
Confirm that the patient is taking the appropriate stroke secondary prevention medication as intended and if not, why not.

A patient with a stroke who also had acute coronary syndrome may be on aspirin and clopidogrel. The clopidogrel should be discontinued after three months and aspirin 75mg alone continued. Aspirin is taken at 300mg for 14 days following acute stroke which is reduced to 75mg for maintenance thereafter.
Dipyridamole MR may have been commenced at 200mg once daily to avoid side effects and should be escalated to twice daily as soon as possible.

Antihypertensives and antidepressants may be on dose escalation treatment pathways and may need reassessment.

**Action**
Counsel and contact prescriber as required.

11 Is the patient receiving the correct monitoring and tests at appropriate time intervals with the aim of meeting appropriate clinical targets and standards for:
- Blood pressure
- Diabetic control
- Statin monitoring
- Warfarin monitoring
- Mood assessment
and are medicine doses being titrated accordingly?

It is important to take into account the standards for monitoring of appropriate parameters following stroke.

**Clinical standards:**
BP target at four - eight months after stroke 140/85 or 130/80 in diabetics. If ACE or ARB started, BP, renal function U&Es monitored one - two weeks after dosage changes.
HbA1c 9 months after discharge should be ≤ 6.5%.
Patient commenced on statin should have LFTs measured within 12 months of initiation.
INR target 2.5 for AF post stroke monitored at least every 12 weeks.
Mood should be assessed within one month post stroke and measures taken to address low mood. Antidepressants may be started and doses may need to be increased after appropriate reassessments.

**Action**
Establish and record at which part of the process the patient is at with regard to monitoring and follow up as required.

12 As a result of the stroke, what disabilities are present that make it difficult or impossible to physically use or take prescribed medicines?

There are three important points here:
1. Patients may have resultant swallow problems or feeding tubes in situ following stroke and medicine formulations may need assessment and doses adjusted accordingly.
2. Patients with resultant weakness, particularly if on their dominant side may have difficulties with operation of devices e.g. insulin pens, inhaler devices or accessing medicines from containers.
3. Patients may have visual problems after stroke which may mean it is difficult for them to read labels/instructions.

The patient’s relative or carer may be required to be counselled to assist in the administration of medicines.

**Action**
Assess, alter medicine formulation or device, discuss with prescriber and counsel as required.
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This aide memoire is for guidance and the pharmacist should use their professional judgement at all times.

NHS Education for Scotland
3rd Floor, 2 Central Quay
89 Hydepark Street
Glasgow G3 8BW
Tel: 0141 223 1600
Fax: 0141 223 1651
www.nes.scot.nhs.uk/pharmacy