

GUIDELINES

Diagnosis and management of headache in adults: summary of SIGN guideline

C W Duncan,¹ D P B Watson,² A Stein,³ on behalf of the Guideline Development Group

¹Aberdeen Royal Infirmary, Aberdeen

²Hamilton Medical Group, Aberdeen

³Scottish Intercollegiate Guidelines Network, Edinburgh EH7 5EA

Correspondence to: A Stein ailsa.stein@nhs.net

Cite this as: *BMJ* 2008;337:a2329 doi:10.1136/bmj.a2329

Why read this summary?

Headache is common and has a lifetime prevalence of over 90% in the United Kingdom.¹ It accounts for 4.4% of consultations in primary care² and 30% of neurology outpatient consultations.^{3,4} Healthcare professionals find diagnosis and management of headache difficult and they worry about missing rare, serious causes.^{2,5} This article summarises the most recent recommendations from the Scottish Intercollegiate Guidelines Network (SIGN) on the diagnosis and management of headache in adults.⁶

Recommendations

SIGN recommendations are based on systematic reviews of best available evidence. The strength of the evidence is graded as A, B, C, or D (figure), but the grading does not reflect the clinical importance of the recommendations. Recommended best practice (“good practice points”) based on the clinical experience of the guideline development group is also indicated (as GPP).

History and examination

A good history is the key to diagnosis. Examination is usually normal in patients with primary headache, such as migraine, tension-type headache, and cluster headache.

- Consider a diagnosis of migraine in patients with recurrent severe disabling headaches associated with nausea and sensitivity to light, and with a normal neurological examination (C). Migraine is characteristically unilateral, pulsating, builds up over minutes to hours, and is aggravated by routine physical activity.⁷ It is the most common type of severe primary headache; it causes considerable disability⁸ and is misdiagnosed in half of cases, usually as tension-type headache or sinus headache.⁹⁻¹²
- Consider a diagnosis of tension-type headache in patients with recurrent, non-disabling bilateral headache and a normal neurological examination (C). Although tension-type headache is less burdensome than migraine to the individual patient, its higher prevalence results in greater societal burden and as many lost days from work.¹³
- Consider the diagnosis of a trigeminal autonomic cephalalgia (cluster headache,

paroxysmal hemicrania, short lived unilateral neuralgiform headache with conjunctival injection and tearing (SUNCT)) in patients with frequent, brief, unilateral headaches in a trigeminal distribution with ipsilateral cranial autonomic features (D).^{7,14} These headaches are rare but excruciatingly severe and have specific treatments. Refer such patients to a neurologist or headache clinic for specialist assessment (D).

- Consider using headache diaries and appropriate assessment questionnaires to aid the diagnosis and management of headache (D).

Chronic daily headache

- Exclude headache caused by medication overuse (medication overuse headache) in all patients with chronic daily headache (D) as this is the commonest cause.
- When chronic daily headache is strictly unilateral, consider the diagnosis of hemicrania continua (D), which responds absolutely to indometacin.
- In patients with new daily persistent headache that is daily from onset, exclude secondary causes (such as subarachnoid haemorrhage, meningitis, raised intracranial pressure, low pressure headache, giant cell arteritis) (D).

Investigation

- Neuroimaging is not indicated in patients who have a clear history of migraine, no “red flag” features, and a normal neurological examination (D). In stable migraine only 0.2% have relevant abnormalities on neuroimaging.¹⁵ Both magnetic resonance imaging and computed tomography can identify incidental abnormalities that may result in patient anxiety as well as dilemmas in practical and ethical management.^{16,17}
- The following are warning signs or “red flags” for potential secondary headache, based on observational studies (D): new headache in a patient aged over 50; thunderclap onset (that is, abrupt and severe); focal and non-focal symptoms; abnormal signs; headache changing with posture; valsalva headache (headache triggered by valsalva-type manoeuvres such as

This is one of a series of *BMJ* summaries of new guidelines, which are based on the best available evidence; they highlight important recommendations for clinical practice, especially where uncertainty or controversy exists. Further information about the guidance and a list of the members of the development group are in the full version on bmj.com.

- coughing, sneezing, bending, heavy lifting, straining); fever; history of HIV; or cancer.
- Consider magnetic resonance imaging of the brain for patients presenting with a trigeminal autonomic cephalalgia (D).
- For patients with a first presentation of thunderclap headache, refer immediately to hospital for exclusion of subarachnoid haemorrhage or alternative secondary cause of thunderclap headache (such as intracranial haemorrhage, meningitis, cerebral venous sinus thrombosis) by CT brain scan, and lumbar puncture if CT brain scan is normal (D).
- For patients with headache and features suggestive of infection of the central nervous system (such as fever, rash), refer immediately to hospital (D).
- For patients with headache and features suggestive of raised intracranial pressure (such as worse lying flat, valsalva headache, focal or non-focal symptoms or signs, papillo-oedema), refer urgently for specialist assessment (D).
- Consider intracranial hypotension in all patients with headache developing or worsening after assuming an upright posture (D). Refer such patients to a neurologist or headache clinic for specialist assessment (D).
- Consider giant cell arteritis in any patient over the age of 50 presenting with a new headache or change in headache, and check erythrocyte sedimentation rate and C reactive protein levels (D).

Management of migraine

Acute therapy

Migraine is often undertreated. Adopt a stepped approach tailored to the patient’s symptoms (such as speed of onset, early vomiting, previous treatments).

- Prescribe aspirin 900 mg or ibuprofen 400 mg (A) combined with an oral or rectal antiemetic to reduce symptoms of nausea and vomiting and to promote gastric emptying (D).
- If previous attacks—of any severity—have not been controlled with simple analgesics, prescribe oral triptans (preferably almotriptan 12.5 mg, eletriptan 40-80 mg, or rizatriptan 10 mg) (A). If a patient does not respond to one triptan, offer another (B).
- For recurrent prolonged attacks or attacks recurring regularly after successful treatment with a triptan, consider combining sumatriptan (50-100 mg) and naproxen (500 mg) (C).
- When starting acute treatment, discuss the risks of medication overuse headache with the patient (GPP). Patients using any acute or symptomatic headache treatment are at risk of medication overuse headache; those with migraine and frequent headache and those using opioids or triptans are at most risk.¹⁸
- To reduce the risk of medication overuse headache and dependence do not use opioid analgesics routinely to treat acute migraine (D).

Medication overuse headache

- For patients in whom this headache is caused by simple analgesics or triptans, advise abrupt withdrawal of the overused medication (C). In most patients this can be done in the outpatient department with structured advice (such as an explanation about how medications cause headache, warning about withdrawal headache and other withdrawal symptoms, and the expectation that headache frequency will reduce and preventive treatments will regain their effectiveness).
- For patients in whom medication overuse headache is caused by opioids and analgesics that contain opioids, consider gradual withdrawal of the overused medications (D). For most patients this can also be done in the outpatient department.

Prevention

- Consider preventive pharmacological treatment in patients with recurring migraines that interfere substantially with their daily routine. This will not stop all migraine and may not be effective in patients with medication overuse headache. Choice depends on comorbidities, potential drug interactions, and patient preference.
- Prescribe propranolol 80-240 mg a day as first line prophylaxis (A).
- As alternative prophylaxis, prescribe either the tricyclic antidepressant amitriptyline 25-150 mg (B) or one of the antiepileptics, topiramate

The grade of recommendation relates to the strength of the supporting evidence on which the evidence is based. It does not reflect the clinical importance of the recommendation

A • At least one high quality meta-analysis, systematic review of randomised controlled trials, or randomised controlled trial with a very low risk of bias and directly applicable to the target population; or

• A body of evidence consisting principally of well conducted meta-analyses, systematic reviews of randomised controlled trials, or randomised controlled trials with a low risk of bias directly applicable to the target population, and demonstrating overall consistency of results

B • A body of evidence including studies rated as high quality systematic reviews of case-control or cohort studies, and high quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relation is causal and which are directly applicable to the target population, and with overall consistency of results; or

• Extrapolated evidence from studies described in A

C • A body of evidence including well conducted case-control or cohort studies with a low risk of confounding or bias and a moderate probability that the relation is causal and which are directly applicable to the target population and with overall consistency of results; or

• Extrapolated evidence from studies described in B

D • Non-analytic studies, such as case reports, case series, expert opinion; or

• Extrapolated evidence from studies described in C

Good Practice Points (GPP)

Recommended best practice based on the clinical experience of the guideline development group

Explanation of SIGN grades of recommendations.

50-200 mg a day (A) or sodium valproate 800-1500 mg a day (A).

Management of tension-type headache

- For acute treatment prescribe aspirin or paracetamol (A).
- If prophylaxis is required, tricyclic antidepressants, particularly amitriptyline 25-150 mg a day, are the agents of choice (A).

Management of trigeminal autonomic cephalalgias

Cluster headache

Cluster headaches are rapid onset, excruciatingly severe, short lived headaches. Oral triptans have no place in their routine management.

Acute treatment—Prescribe subcutaneous injection of 6 mg sumatriptan as the first choice (A); in patients who cannot tolerate subcutaneous sumatriptan, prescribe nasal sumatriptan or nasal zolmitriptan (A); consider administering 100% oxygen (7-12 litres per minute) in all patients (GPP) as this has been shown to be effective for acute attacks.

Prophylaxis—Prescribe verapamil (240-960 mg) as the first choice (B); other treatments are available, but inadequate evidence was identified to make specific recommendations. In addition to verapamil, steroids (60 mg prednisolone for five days then reduced by 10 mg every two days till stopped) can be given at the start of a cluster bout to abort it.

Paroxysmal hemicrania

This responds absolutely to indometacin, usually within a few days of a therapeutic dose.

Pregnancy, contraception and other hormonal factors

- Prescribe paracetamol 1000 mg for pregnant patients with acute migraine (GPP). If paracetamol provides insufficient analgesia aspirin 300 mg or ibuprofen 400 mg can be used in the first and second trimester of pregnancy (GPP). There is insufficient evidence to advocate the use of triptans in pregnancy.
- Do not prescribe combined oral contraceptives to women who have migraine with aura as this increases risk of ischaemic stroke (relative risk 8.72 (95% confidence interval 5.05 to 15.05))(B).
- More than half of women with migraine report an increased frequency and severity of migraine attacks around menstruation. If attacks don't respond to simple analgesics the triptans sumatriptan, zolmitriptan, naratriptan and rizatriptan are recommended.
- It is safe to prescribe hormone replacement therapy to women with migraine (D). However, hormone replacement therapy may make migraine worse and should be considered as a potential cause for worsening migraine (D).

Lifestyle factors

- No good quality evidence was found to support the notion that specific foods trigger migraine.

Expert opinion suggests that missing meals may be a factor.

- Stress management should be considered as part of a combined treatment programme (including group exercise and relaxation classes) to help patients reduce the frequency and severity of migraine headaches (B).

Psychological and complementary therapies

- No good quality contemporary evidence was identified for cognitive behavioural therapy or any specific relaxation therapy or biofeedback technique in the management of headache.
- Spinal manipulation therapy by a trained physiotherapist can help patients with cervicogenic headache—that is, headache arising from the neck (B).
- Acupuncture can help reduce migraine frequency and severity (B). However, sham acupuncture (superficial needling at non-acupuncture points) can be equally as effective
- Homoeopathy is not effective as a migraine prophylaxis and evidence is limited for the use of herbs, vitamins, and minerals.

Overcoming barriers

In the UK most patients with headache are managed by their general practitioners, who refer 2-3% of patients consulting for headache to neurological clinics.² However, observational studies have shown that both general practitioners and hospital doctors are poor at diagnosing and managing headache,¹⁹ and headache morbidity and disability are often under-recognised, leading to undertreatment.

There has been very little evaluation of the effectiveness of headache education in the UK. A Turkish and an American study have shown that educating general practitioners about headache can improve diagnosis and management.^{20,21} In the latter study, a health maintenance organisation encouraged primary care physicians to attend an educational session on headache if they were referring headache patients into the secondary care clinic. It is unlikely that a similar system would work in the UK as it would be considered too prescriptive, but local headache services might reasonably be expected to provide headache education for doctors who make referrals.

Contributors: All authors have contributed to the writing of the summary. CWD and DPBW are the guarantors.

Funding: No funding was received for writing this summary.

Competing interests: CWD has been reimbursed by Janssen-Cilag, the maker of Topamax, for attending headache meetings and a headache course. CWD and DPBW are members of the British Association for the Study of Headache. DPBW has been reimbursed by Menarini, the manufacturer of Migard, and Janssen-Cilag for attending headache meetings. DPBW has received lecture fees by Menarini and MSD, the makers of Maxalt. DPBW is a member of the Migraine in Primary Care Advisor's Group and the patient organisation the Migraine Action Association.

Provenance and peer review: Commissioned; not externally peer reviewed

- 1 Boardman H, Thomas E, Croft PR, Millson DS. Epidemiology of headache in an English district. *Cephalalgia* 2003;23:129-37.
- 2 Latinovic R, Gulliford M, Ridsdale L. Headache and migraine in primary care: consultation, prescription, and referral rates in a large population. *J Neurol Neurosurg Psychiatry* 2006;77:385-7.

- 3 Lamer A. Guidelines for primary headache disorders in primary care: an "intervention" study. *Headache Care* 2006;3(1):1-2.
- 4 Patterson V, Esmonde TF. Comparison of the handling of neurological outpatient referrals by general physicians and a neurologist. *J Neurol Neurosurg Psychiatry* 1993;56:830.
- 5 British Association for the Study of Headache. *Guidelines for all healthcare professionals in the diagnosis and management of migraine, tension-type, cluster and medication-overuse headache*. 3rd ed. 2007. http://216.25.88.43/upload/NS_BASH/BASH_guidelines_2007.pdf
- 6 Scottish Intercollegiate Guidelines Network (SIGN). *The diagnosis and management of headache in adults*. (Guideline No 107.) Edinburgh: SIGN, 2008. www.sign.ac.uk
- 7 International Headache Society. The international classification of headache disorders, 2nd ed. *Cephalalgia* 2004;24(suppl1):8-160.
- 8 Steiner T, Scher AI, Stewart WF, Kolodner K, Liberman J, Lipton RB. The prevalence and disability burden of adult migraine in England and their relationships to age, gender and ethnicity. *Cephalalgia* 2003;23:519-27.
- 9 Diamond M. The role of concomitant headache types and non-headache co-morbidities in the underdiagnosis of migraine. *Neurology* 2002;58(suppl 6):S3-9.
- 10 Lipton R, Stewart WF, Celentano DD, Reed ML. Undiagnosed migraine headaches. A comparison of symptom-based and reported physician diagnosis. *Arch Intern Med* 1992;152:1273-8.
- 11 Lipton RB, Cady RK, Stewart WF, Wilks K, Hall C. Diagnostic lessons from the spectrum study. *Neurology* 2002;58(suppl 6):14.
- 12 Tepper SJ, Dahlof CG, Dowson A, Newman L, Mansbach H, Jones M, et al. Prevalence and diagnosis of migraine in patients consulting their physician with a complaint of headache: data from the Landmark Study. *Headache* 2004;44:856-64.
- 13 Stovner L, Hagen K, Jensen R, Katsarava Z, Lipton R, Scher A, et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. *Cephalalgia* 2007;27:193-210.
- 14 Matharu MS, Boes CJ, Goadsby PJ. Management of trigeminal autonomic cephalgias and hemicrania continua. *Drugs* 2003;63:1637-77.
- 15 Frishberg BM, Rosenberg JH, Matchar DB, McCrory DC, Pietrzak MP, Rozen TD, et al. Evidence based guidelines in the primary care setting: neuroimaging in patients with non-acute headache. 2000. www.aan.com/professionals/practice/pdfs/gl0088.pdf
- 16 Vernooij MW, Ikram MA, Tanghe HL, Vincent AJ, Hofman A, Krestin GP, et al. Incidental findings on brain MRI in the general population. *N Engl J Med* 2007;357:1821-8.
- 17 Weber F, Knopf H. Incidental findings in magnetic resonance imaging of the brains of healthy young men. *J Neurol Sci* 2006;240(1-2):81-4.
- 18 Katsarava Z, Schneeweiss S, Kurth T, Kroener U, Fritsche G, Eikermann A, et al. Incidence and predictors for chronicity of headache in patients with episodic migraine. *Neurology* 2004;62:788-90.
- 19 Watson DP. Easing the pain: challenges and opportunities in headache management. *Br J Gen Pract* 2008;58:77-8.
- 20 Karli N, Zarifoglu M, Erer S, Pala K, Akis N. The impact of education on the diagnostic accuracy of tension-type headache and migraine: a prospective study. *Cephalalgia* 2007;27:41-5.
- 21 Smith TR. Evaluation of a comprehensive physician and patient education programme for the treatment of migraine: interim results from the Mercy migraine management project. *Headache Care* 2004;1:195-8.

Commentary: Controversies in SIGN guidance on diagnosing and managing headache in adults

Giles Elrington

Barts and The London NHS Trust,
London E1 1BB

elrington@aol.com

Cite this as: *BMJ* 2008;337:a2445
doi:10.1136/bmj.a2445

A discussion of headache centres on two largely independent areas: diagnosis of possible serious cause (usually none is found), and pain management (typically less, not more medication is needed). The newly published guideline from the Scottish Intercollegiate Guidelines Network (SIGN)¹ uses the familiar split of primary and secondary headache—that is, benign and serious headache.

Secondary headache

It is unusual for headache to be the sole symptom of brain tumour.¹ The guideline omits demographics: the approximate risk of brain tumour or other serious cause for headache is 1:1000 for headache presenting in primary care, 1:100 for headache presenting in secondary care (outpatients), and 1:10 for headache presenting in accident and emergency departments.

Imaging

The guideline lists familiar "red flag" indications.¹ Reassurance from a scan is supported by a single, unblinded study showing benefit at three months but not at one year.² The guideline discusses risks of imaging, not confined to computed tomography ionising radiation. Incidental findings are common and sometimes lead to inappropriate treatment. The rate of incidental findings comes from two recent studies. In one, a quarter of 2536 healthy 20 year olds had magnetic resonance scans that were not strictly normal, of which three quarters were normal variants.³ In the other, among 2000 healthy 45 to 97 year olds, one in eight had significant intracranial abnormality,

including stroke (7%), aneurysm or angioma (1.2%), benign tumour (mostly meningioma) (1.6%).⁴ "Sitting on a time bomb" is the typical comment from a patient with headache and an incidental abnormality. These studies overlook the common finding of nasal sinus disease: chronic sinusitis is not the cause of chronic headache. A low threshold for referring patients with headache for imaging may seem compassionate and safe, but there is a "number needed to harm" that has not yet been quantified.

Other tests

Normal results on imaging can occur in secondary headache. Giant cell arteritis requires screening preferably with both erythrocyte sedimentation rate and C reactive protein; the pain is not specifically temporal.¹ First, worst, or thunderclap headache with a normal CT brain scan demands lumbar puncture to look for blood products (not for red cells).¹ These matters often remain overlooked, particularly by those who rely more on imaging than on clinical assessment.

Primary headache

Primary headaches have neural localisation and a presumed molecular pathology; these are not disorders of the psyche, blood vessels, neck, diet, or allergy.

Migraine and tension-type and cluster headache

Chronic migraine is a new diagnosis (since 2004).⁵ The distinction between chronic migraine and chronic tension-type headache is challenging.¹ Some authorities now rarely diagnose tension-type headache, seen as a

milder, featureless migraine; others reject chronic migraine. The guideline seems to regard migraine as unilateral and tension-type headache as bilateral¹; certainly these can coexist, have similar localisation to the brainstem, and require similar treatments. However, the rarer group of primary headaches, the trigeminal autonomic cephalalgias (such as cluster headache) arise in the midbrain, respond to neither tricyclics nor β blockers, and are unilateral. Migraine may be more asymmetrical than unilateral; according to the International Headache Society's criteria, migraine need not be unilateral, nor tension-type headache bilateral.⁵

Medication overuse headache

Medication overuse headache, technically a secondary headache,⁵ belongs in the context of the primary headaches (migraine and tension-type headache, not trigeminal autonomic cephalgia), which it mimics.

The SIGN guideline states that medication overuse headache must be excluded in all patients with chronic daily headache.¹ Medication overuse headache is "by far the most common cause of migraine-like headache on ≥ 15 days a month,"⁵ affecting 1 in 50 people.⁶ The guideline emphasises the importance of stopping medication but does not seem to support the view that drug treatment for preventing medication overuse headache is futile and may worsen headache.⁶ Topiramate, without medication cessation, offers a statistically significant though numerically small benefit of 3.5 fewer headache days a month.⁷ Recognition and treatment of medication overuse headache is the best single strategy for sorting out chronic headache.

Facial pain

The SIGN guideline does not cover facial pain, so I hope it will publish a further high quality guideline on that subject.

Contributor: The author is the sole contributor.

Competing interest: The author is a member of the International Headache Society and British Association for the Study of Headache. He has in the past been paid by the manufacturers of most if not all drugs licensed for the treatment of headache and migraine and currently undertakes drug trials in migraine and headache. He has a private practice that profits from both overconcern about the risk of brain tumour as a cause of headache and under-recognition of medication overuse headache.

Provenance and peer review: Commissioned; not externally peer reviewed.

- 1 Scottish Intercollegiate Guidelines Network (SIGN). *The diagnosis and management of headache in adults*. (Guideline No 107.) Edinburgh: SIGN, 2008. www.sign.ac.uk.
- 2 Howard L, Wessely S, Leese M, Page L, McCrone P, Husain K, et al. Are investigations anxiolytic or anxiogenic? A randomised controlled trial of neuroimaging in chronic daily headache. *J Neurol Neurosurg Psychiatry* 2005;76:1558-64.
- 3 Weber F, Knopf H. Incidental findings in magnetic resonance imaging of the brains of healthy young men. *J Neurol Sci* 2006;240(1-2):81-4.
- 4 Vemooij MW, Ikram MA, Tanghe HL, Vincent AJ, Hofman A, Krestin GP, et al. Incidental findings on brain MRI in the general population. *N Engl J Med* 2007;357:1821-8.
- 5 International Headache Society. The international classification of headache disorders. 2nd ed. *Cephalalgia* 2004;24(suppl1):8-160.
- 6 British Association for the Study of Headache. *Guidelines for all healthcare professionals in the diagnosis and management of migraine, tension-type, cluster and medication-overuse headache*. 3rd ed. 2007. http://216.25.88.43/upload/NS_BASH/BASH_guidelines_2007.pdf
- 7 Diener HC, Bussone G, van Oone JC, Lahaye M, Schwalen S, Goadsby PJ, et al. Topiramate reduces headache days in chronic migraine: a randomized, double-blind, placebo-controlled study. *Cephalalgia* 2007;27:814-23.



10-MINUTE CONSULTATION

Memory problems in an older person

Kallur Suresh,¹ David Smalley,² Zuzana Walker³

A 73 year old woman is brought by her daughter with a one year history of worsening forgetfulness. She lives on her own and has been knocking on neighbours' doors in the middle of the night saying she needs to go shopping.

What issues you should cover

History—Gather as much detail about the forgetfulness as possible from the patient and her daughter. When did it begin? How was it noticed? What does she forget? Is it getting worse? Does she have insight? Does she misidentify people? Does she have difficulty in looking after herself? Is she incontinent? Does she remember to take her medications? Is she anxious or depressed? Is she eating and drinking enough? Is she paying her bills? Does she have any major medical problems such as stroke, transient ischaemic attack, diabetes mellitus, Parkinson's disease? Does she have any risk factors for cerebrovascular disease? Does she smoke or drink alcohol excessively? What medication is she taking? A

more detailed assessment may be carried out at a later stage.

Examination—A brief physical examination may identify signs of a systemic illness that may be worsening the confusion. Pay particular attention to cardiovascular and nervous systems, looking for signs of cardiac disease or stroke. A one year history with recent worsening indicates a delirium superimposed on chronic cognitive impairment. Look for symptoms

Common causes of memory problems in older people

Dementias—Alzheimer's disease, vascular dementia, dementia with Lewy bodies, dementia in Parkinson's disease, alcohol related dementia

Mild cognitive impairment—Cognitive impairment evident on testing but not affecting functioning; people with cognitive impairment are more likely to develop dementia at a later stage

Delirium, depressive pseudodementia

¹North Essex Partnership NHS Foundation Trust, Harlow, Essex CM20 1QX

²Nuffield House Surgery, Harlow, Essex

³Department of Mental Health Sciences, University College London, London

Correspondence to: K Suresh kallur.suresh@nepft.nhs.uk

Cite this as: *BMJ* 2008;337:a1170 doi:10.1136/bmj.a1170

USEFUL READING

Small G. What we need to know about age-related memory loss. *BMJ* 2002;324:1502-5.

NICE clinical guidelines on dementia (www.nice.org.uk/cg042) and technology appraisal of anti-dementia drugs (www.nice.org.uk/ta111) November 2006.

American Academy of Neurology Guideline Summary for Clinicians: detection, diagnosis and management of dementia www.aan.com/professionals/practice/pdfs/dementia_guideline.pdf.

Useful websites

Alzheimer's Society (www.alzheimers.org.uk) This is the website of the leading dementia charity and provides plenty of reliable, helpful information about all aspects of the dementias, along with recent updates. It is aimed at the general public.

Royal College of Psychiatrists (www.rcpsych.ac.uk) A good source of information for both professionals and public on all aspects of mental health.

British Geriatrics Society (www.bgs.org.uk) Website providing information to professionals caring for frail, older people.

and signs of urinary tract infection, chest infection, constipation, dehydration, and self neglect, which are common causes of delirium in an older person. Look for impaired hearing or vision. Examine her for physical injury, either unintentional or related to possible abuse.

Situation as seen by the carer—If the daughter is the main carer, how is she coping? Burden on the carer is common and often dictates the urgency of any intervention.

What you should do

Cognitive assessment—A quick assessment of the severity of cognitive impairment should include orientation to time (day of the week, month, year) and place (name of place, town, floor of building), recall of three items (apple, table, penny) and general knowledge (name of queen, prime minister, news headlines, etc). A formal assessment can be made using the 30-point Mini-Mental State Examination or the 10-point Abbreviated

Mental Test Score (both available from the Alzheimer's Society website (www.alzheimers.org.uk/site/index.php)).

Risk assessment—Does she forget to turn the gas cooker off (risk of fire)? Does she wander and get lost (risk of exposure and exploitation)? Does she forget to take her tablets (risk of non-adherence) or take more than the prescribed dose (risk of unintentional overdose)? Does she eat and drink adequately? If you see this patient in her own home, it is worth looking at the state of her fridge—is it empty or full of decaying food (risk of self-neglect or food poisoning)? Does she drive (risk of accidents)? Does she become aggressive (risk of violence)? Is she disinhibited (risk of sexually inappropriate behaviour)? Can she handle her money (vulnerability to financial abuse)? Does she have any injuries (risk of physical abuse)?

Investigations will help rule out reversible causes of confusion. These include full blood count, tests for urea and electrolytes, liver and thyroid function tests, and determining glucose, vitamin B-12 and folate, and calcium and phosphate concentrations. Perform a urine dipstick test if possible. A chest x ray may be necessary in smokers, and computed tomography of the head may be needed if there is a history of falls and you need to exclude a subdural haematoma or other intracranial pathology.

Referral—refer the patient to the local psychogeriatric service or a memory clinic for further assessment; a multi-disciplinary approach to future management may be necessary. If she has underlying Alzheimer's disease, she could be treated with cholinesterase inhibitors.

Contributors: KS, DS and ZW have contributed equally to the preparation of this article. KS is guarantor.

Competing interests: None declared.

Provenance and peer review: Commissioned; externally peer reviewed

A memorable patient

Goodbye

He was about 70 years of age, frail but still mentally alert, living with his wife not far from the surgery. He had an inoperable carcinoma, and I used to visit him every Monday to see how he was getting on and to renew his prescriptions, particularly for a fortified liquid feed.

I usually visited him after finishing my morning surgery. Mondays were busy—sometimes very busy with home visits—so I do not know how and why my patient and I had chosen Monday, but I never missed the appointment except when I was on holiday. He always greeted me with a small glass of whisky and ginger ale, even if I didn't want it. On reflection, I suppose the offer was largely to prolong my visit at his bedside. He always took his fortified feed when I had my whisky. I would notice the sparkling joy in his eyes when I gratefully accepted the drink and was about to take the first sip. Our conversation often proceeded to the changing pattern of lifestyle in England and elsewhere and to his visits to India before and after the second world war.

One Friday, I was puzzled to see his name on the visiting list. As I sat on the chair next to his bed, he said, "Sorry to call today, but it is the time I need to say goodbye to you."

I politely retorted, "What's all this? You are in fine shape, and I cannot see any immediate danger."

Strangely, my normally talkative patient was now withdrawn, and his lips hardly moved. The sparkle in his eyes was not there. A bottle of whisky, neatly wrapped, was his present to me. We both sat quietly for some time before I left when he again whispered in a very soft tone, "Goodbye." His wife told me that he had been like this since the morning.

When I arrived at the surgery on Monday morning I was told that he had died on Friday night, a few hours after my visit. His manner of saying goodbye still haunts me almost two decades later.

Suresh Kumar Pathak retired general practitioner, Romford
skpathak137@aol.com