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Obstructive sleep apnoea:

is it moving into primary care?

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BACKGROUND

Periods of obstructive sleep apnoea (OSA), first properly described in 1965,[1] have been shown to occur in around 25% of males and 10% of females.[2] But only about a fifth will need or benefit from treatment.

AETIOLOGY

OSA is due to excessive collapsing forces around the pharynx that overpower the decreased muscle tone during sleep. Snoring is an early marker of this collapse, and is either partial (causing hypopnoea) or complete (causing apnoea). To prevent asphyxia such events are terminated by a brief awakening after 20 to 40 seconds or so, restoring muscle tone and airflow, but of which the patient is rarely aware. A few such events during sleep are regarded as within the normal range, but there is a continuum of severity, with the most severe cases experiencing apnoeic events every minute across the whole night, with gross sleep fragmentation and recurrent hypoxic events. The dominant risk factor is upper-body obesity, mainly around the neck, although jaw shapes that reduce pharyngeal volume are important. In children, enlarged tonsils are the main risk factor and tonsillectomy is usually curative.

SYMPTOMS

Excessive daytime sleepiness is the main symptom of OSA, usually then called OSA syndrome (OSAS). This may be described as tiredness or fatigue, but closer questioning usually reveals it to be more sleepiness (though in women tiredness may be the main complaint). OSAS usually develops over several years, thus the patient may not be fully aware of just how symptomatic they are. Talking to a close relative can be useful, particularly regarding any sleepiness while driving. However, many people with OSA are not sleepy and do not need treatment.

ASSESSMENT

The main reason for any referral will be excessive sleepiness that interferes with quality of life, or impairs a vigilance-critical activity such as driving. Simple tools help assess both the likelihood of OSA (the OSA-50 score or the longer STOP-BANG questionnaire, and the degree of associated sleepiness (Epworth sleepiness score [ESS] [Box 1]). These are imperfect tools and only a guide to supplement a careful history. Simple and cheap home sleep studies are usually adequate to diagnose the majority of obstructive sleep apnoea.[3]

TREATMENT

The decision to treat largely depends on symptom severity. Severe OSA can raise blood pressure,[4] provoke atrial fibrillation,[5] and probably increase the risk of strokes and heart attacks.[6] However, there are much better and more established therapies for reducing such vascular risks. Thus, treating OSA in the absence of symptoms is only very rarely indicated.

The main treatment is continuous positive airway pressure (CPAP) during sleep, delivered via the nose, or nose and mouth, which splints open the upper airway, a brilliantly simple concept.[7] The National Institute for Health and Care Excellence (NICE) has deemed CPAP a highly cost-effective treatment that should be offered to all patients with symptomatic OSA (Box 1). CPAP is not an easy therapy to use, particularly with the prospect of indefinite use; it requires skilled, careful, and sympathetic initiation to ensure good adherence. There are approximately 230 000 patients on CPAP in the UK; compliance is generally excellent, at least as good as compliance with asthma or hypertension therapy.[8] Resolution of symptoms is usually complete and rapid. Once established on CPAP, maintenance and follow-up services are required.

Other therapies are generally less successful and appropriate mainly for mild cases. Simple lifestyle changes such as weight reduction, stopping alcohol after

Box 1. Useful resources

- Freight Transport Association, documentation supplied with their freely available driver CPC training module on OSA, includes the ESS and OSA-50 questionnaires; http://www.fta.co.uk/export/sites/fta/_galleries/downloads/drivers/Obstructive_Sleep_Apneoa.pdf
- Patients' association website, Sleep Apnoea Trust Association (SATA); http://www.sleep-apnoea-trust.org/
- British Thoracic Society advice on sleep apnoea and driving; https://www.brit-thoracic.org.uk/document-library/about-bts/documents/bts-position-statement-on-driving-and-obstructive-sleep-apnoea/
- NICE advice on referring patients with sleep apnoea who are vocational drivers; http://cks.nice.org.uk/obstructive-sleep-apnoea-syndrome#!scenario
- NICE technology appraisal of CPAP; https://www.nice.org.uk/guidance/ta139
- OSA partnership group (campaign for fast tracking of vocational drivers with OSAS); http://www.osapartnershipgroup.co.uk/
- British Lung Foundation website covering many aspects of sleep apnoea; https://www.blf.org.uk/Page/Obstructive-Sleep-Apnoea
- Freight Transport Association's freely available driver CPC training module on OSA; http://www.fta.co.uk/services/training/obstructive_sleep_apnoea.html
- STOP-BANG screening questionnaire for OSA (designed more for pre-operative use); http://www.stopbang.ca/osa/screening.php

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Competing interests

John Stradling has done some consulting work for ResMed UK.

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6 pm, and sleeping on one's side, or well propped up, may help a bit. Oral appliances are available that are worn in the mouth during sleep, holding the lower jaw forward, thus enlarging the pharynx and reducing its tendency to collapse. Custom-fitted devices by dentists are generally thought to work best, although simpler devices may be adequate, particularly for snoring.

Other approaches to treating OSA have not stood up to properly conducted trials. However, bariatric surgery has a role, and OSA is a comorbidity that increases the cost-efficacy of such surgery.[9] Removal of large tonsils in children is usually effective, and tonsillectomy may occasionally be effective in the less obese adult. A few centres offer surgical advancement of the mandible and maxilla in highly selected cases, although there are concerns over remodelling with OSA recurrence some years later.

EMERGING ISSUES

OSA is under-recognised due to its relatively non-specific presentation, with 'tired all the time' being a common label. Heightened awareness and asking the right questions are all that are required. Sleep units are generally overwhelmed with referrals, not surprising given the high prevalence of OSA. As with many common conditions (for example, hypertension), several aspects of management are increasingly being taken over by general practice.[10] There are already practices doing their own home sleep studies, funded by redirecting the income previously going to secondary care. Only patients with abnormal or equivocal studies then need referral. The results of these home studies can be reviewed locally, or electronically transferred to the sleep unit for reporting (or to accompany any referral). Interpreting home sleep studies does need some experience and sleep units should offer training opportunities.

The increasing number of patients on CPAP means an accumulating follow-up workload with which most sleep units are not coping. In fact, their expertise would be better spent on initiating CPAP and dealing with the more complex cases (such as those requiring non-invasive ventilation). An evolving solution for long-term follow-up, reducing costs through economies of scale, is a third-party supplier running a large call centre, serving many areas and hospitals. Recent technological developments greatly facilitate this: digital information on actual usage, residual OSA, and air leakage from ill-fitting masks is logged every night by modern CPAP machines, and can be instantly available via wireless technology to the call centre.

There is a higher driving accident rate in patients with OSAS from sleepiness and reduced vigilance.[11] People are responsible for their own fitness to drive, and this includes sleepiness, whether it is due to 'normal' reasons (for example, excessive socialising) or medical causes such as OSAS. The Driver and Vehicle Licensing Agency (DVLA) says that, if a medical cause leads to sleepiness sufficient to impair driving, then the patient should stop driving and inform them; they then make an assessment as to whether a licence should be revoked. If sleepiness is not sufficient to interfere with driving, the DVLA does not need to be informed (recent BTS guidelines on driving and OSA are very helpful in this respect; [Box 1], although DVLA rules may change in 2016). It is a doctor's responsibility to help make an assessment of whether driving is likely to be impaired, by asking the right questions, and then advising the patient accordingly. Once successfully treated for OSA, the sleepiness resolves and there are no longer any issues related to driving.

This issue is of particular concern to commercial vehicle drivers (especially heavy goods vehicle and coach drivers). Concerns over losing one's driving license, and thus livelihood, make such drivers reluctant to come forward with symptoms suggestive of OSA, thus leaving the driver untreated and potentially dangerous on the roads. As with ordinary licences, once successfully treated there are no issues and driving is permitted again. There has been a recent initiative for commercial drivers to try to guarantee a maximum of a 4-week wait, from urgent referral to treatment (Box 1). Such an accelerated management pathway is entirely possible and has recently been endorsed by NICE (Box 1).

SUMMARY

OSAS is common and under-recognised and can cause disabling and dangerous sleepiness. It is easily and cheaply diagnosed with home monitors and can be effectively treated with CPAP applied during sleep.

OSA is sufficiently common that some aspects of its diagnosis and management (and associated funding) will have to move out of secondary and into primary care. Third-party providers may provide a cost-effective solution to the long-term care of patients on CPAP.

OSA in commercial drivers is a particular concern and requires special attention.

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