Central post-stroke pain

Introduction

Central post-stroke pain (CPSP) occurs in approximately 2-8% of people with stroke (Andersen et al, 1995). It is considered a neuropathic pain syndrome following a cerebrovascular accident and is characterized by pain and sensory abnormalities in parts of the body which corresponds to the stroke lesion. To confirm the diagnosis there should be no obvious nociceptive, psychogenic or peripheral neurogenic origin for the pain. CPSP was originally described as the thalamic pain syndrome but it has been shown to occur with other lesion sites and is currently held to be a lesion affecting the spino-thalamo-cortical pathways irrespective of the lesion level in the neuraxis (Andersen et al. 1995).

The pain is often described as constant, of varying severity and with varying qualities such as lacerating, aching, freezing, burning or squeezing. People with CPSP are more likely to have abnormal responses to temperature (high or low temperatures) and to have dysesthesia (unpleasant sensations to stimuli not usually perceived as unpleasant) and allodynia (pain response to stimuli that does not usually elicit pain) (Andersen et al. 1995). CPSP often appears within one month of the stroke but can still appear any time within the first 12 months.

Management is still not clear from the literature but relies on pharmacological interruptions to central processing. Much of the literature is for neuropathic pain in general rather than CPSP itself.

Research

Saarto and Wiffen (2007) found tricyclic antidepressants and venlafaxine to be effective for neuropathic pain and it is possible that other anti-depressants may also be effective but the evidence is not as clear.

Lampl et al (2002) also conducted a Cochrane review and reported that anticonvulsants (carbamazepine) were more effective than placebo and equally effective as amitriptyline in reducing neuropathic pain but may not have as big an effect in CPSP. *Note the Cochrane review supporting anticonvulsants for acute and chronic pain is currently withheld pending updates (Wiffen 2005 and Wiffen 2009).* Duhmke et al (2006) also found tramadol to have an effect on neuropathic pain but the effect was not as strong.

Nnoaham and Kumberg (2008) describe other interventions for CPSP such as transcutaneous electrical nerve stimulation, acupuncture or psychological interventions such as cognitive behavioural therapy or desensitisation. Whilst these only have limited evidence to date they could be tried before or with pharmacological intervention (given the potential events associated with the latter). Other more invasive interventions such as chemical or surgical sympathectomy have insufficient evidence.

NSF Guidelines

7.6.2 Central post-stroke pain

a) People with stroke found to have unresolved CPSP should receive a trial of:
• tricyclic antidepressants e.g. amitriptyline first, followed by other tricyclic agents or venlafaxine
• (Grade B: Saarto and Wiffen, 2007)
• Anticonvulsants e.g. carbamazepine. (Grade C: Wiffen et al. 2005 NB review currently withdrawn)

b) Any person whose CPSP is not controlled within a few weeks should be referred to a specialist pain management team. (Good practice point)

Suggested Assessment
Measures of pain/status could include:
• Visual analogue scale for pain
• Functional measures to determine impact of pain on daily living
• Sensory tests to determine presence of dysesthesia or allodynia.

Practice Suggestions
Conservative management to trial could include:

• transcutaneous electrical nerve stimulation,
• acupuncture
• psychological interventions such as cognitive behavioural therapy or desensitisation

Pharmacological interventions are not clear and require careful thought as to type, dosage, impact of age and co-morbidities. Current evidence is changing rapidly.

Referral to a specialist pain management team for severe, non-responding CPSP is recommended.

Considerations
• Consultation with health professionals who are well versed in management of central and neuropathic syndromes is indicated.
• Education of the stroke survivor and family/carers is necessary for long term management.

References and readings


