

Clinical Expert Summary

Dexmedetomidine (Dexdor[®]▼) for the sedation of adult ICU (intensive care unit) patients requiring a sedation level not deeper than arousal in response to verbal stimulation (corresponding to Richmond Agitation-Sedation Scale (RASS) 0 to -3)

1. Existing guidelines

The clinical experts identified the following guidance:

- Intensive Care Society. Sedation guideline (2007)¹
- Intensive Care Society. Sedation in intensive care (in preparation)
- Betsi Cadwaladr University Local Health Board, North Wales. Sedation in critical care policy (in preparation). This document is currently being developed for the three units in North Wales and will cover a number of available pharmacological regimens including the use of clonidine.

2. Disease prevalence

Clinical experts commented that all patients intubated and ventilated in critical care would potentially be eligible for treatment with dexmedetomidine. This has been estimated as approximately 200 patients per year in Wrexham and 287 patients per year in Glan Clwyd hospital (2008–2009 data).

3. Current treatment options

Current treatment options typically consist of combinations of propofol and opiates with or without benzodiazepines such as midazolam; however, for sedation in patients staying longer than 72 hours, morphine and midazolam infusions are common. Clonidine is often used in patients who are difficult to sedate with such regimes or for the control of drug withdrawal. One clinical expert suggested that clonidine may be used in patients with a history of alcohol abuse.

4. Unmet needs

One clinical expert stated that sedation surveillance was problematic and that owing to the relatively long-acting nature of most drugs, a daily assessment of sedation should be made in order to avoid over-sedation. In addition, it was noted that there is an unmet need where these agents are used are to control symptoms due to drug withdrawal, whether it be self-administered or iatrogenic. In particular, clonidine is currently being used in an unlicensed way in order to control the sympathetic symptoms that these patients experience (such as hypertension, tachycardia, sweating, lacrymation etc). The clinical expert believed that the use of more conventional sedatives, such as benzodiazepines to control these type of symptoms is suboptimal, difficult to manage and likely to lead to relative overdose.

Other potential problems were identified in relation to prolonged sedation such as:

- Prolonged duration of mechanical ventilation
- ICU-acquired weakness
- ICU-acquired infection
- Adverse haemodynamic effects
- Interference with enteral feeding

In particular, another clinical expert highlighted delirium as an increasingly recognised problem in sedated ITU patients, which could potentially lead to longer term issues such as post-traumatic stress disorder. The clinical expert highlighted that NICE have issued

guidance² on the recognition of those at risk and states that by having a patient who is calm, co-operative and orientated will help to prevent many of these problems.

5. Knowledge of product in given indication

One clinical expert stated that the use of dexmedetomidine would appear to give better RASS monitored sedation levels with minimal side effects, which could potentially reduce the duration of sedation and earlier extubation with reduced length of stays. It was noted by another clinical expert that dexmedetomidine, compared with the commonly-used propofol, appears to aid communication and significantly reduce the incidence of critical illness-acquired weakness³. It was highlighted that dexmedetomidine could facilitate interaction with medical and allied health professionals, compared with propofol, particularly those involved with providing physiotherapy. The importance of rehabilitation of critically ill patients was recently stressed in NICE guideline CG83².

Another clinical expert expects that dexmedetomidine would be used to control drug withdrawal in the niche that clonidine currently occupies. It was noted that dexmedetomidine may also have a use in controlling withdrawal reactions in a ward environment.

A clinical expert suggested dexmedetomidine would be reserved for patients in whom a period of mechanical ventilation of >48hours might be predicted.

- 1 Intensive Care Society. Sedation Guideline. Jan 2007. Available at: http://www.ics.ac.uk/intensive_care_professional/standards_and_guidelines/sedation_guidelines_2007. Accessed Apr 2012.
- 2 National Institute for Health and Clinical Excellence. Clinical Guideline 83. Rehabilitation after critical illness. Mar 2009. Available at: <http://guidance.nice.org.uk/CG83>. Accessed Mar 2012.
- 3 Jakob SM, Ruokonen E, Grounds RM et al. Dexmedetomidine vs midazolam or propofol for sedation during prolonged mechanical ventilation. *JAMA: The Journal of the American Medical Association* 2012; 307 (11): 1151-60.