1. GENERAL PRINCIPLES

- Insomnia may be a symptom or a syndrome. The diagnostic criteria are outlined in Table 1.

Table 1 Diagnostic criteria for insomnia [Level 4] (adapted from Wilson et al[1])

In all definitions, one criterion from each of columns A, B & C needs to be fulfilled.

	A	B	C
International Classification of Sleep Disorders (ICSD)[2] and Research Diagnostic Criteria for Insomnia (RDC)[3]	Difficulty - Initiating sleep - Maintaining sleep - Waking up too early or - Sleep is chronically non-restorative or poor in quality	Occurs despite adequate opportunity and circumstances for sleep	At least one form of daytime impairment 1. Fatigue or malaise 2. Poor attention, concentration or memory impairment 3. Social or vocational dysfunction or poor school performance 4. Mood disturbance or irritability 5. Daytime sleepiness 6. Lack of motivation, energy or initiative reduction 7. Prone to errors or accidents at work or while driving 8. Tension headaches or gastrointestinal symptoms in response to sleep loss 9. Concerns or worries about sleep
International Classification of Disease ICD-10[4]	Difficulty in - Falling asleep - Maintaining sleep or - Non-refreshing sleep	3 times a week and for longer than one month	Marked personal distress or interference with personal functioning in daily living
Diagnostic and Statistical Manual of Mental Disorders DSM-IV[5]	Predominant complaint - Difficulty initiating sleep - Difficulty maintaining sleep or - Non-restorative sleep	For at least one month	Clinically significant distress or impairment in social, occupational or other important areas of functioning.

- Insomnia may be transient (less than 1 month), short–term (1-6 months), or chronic (more than 6 months). [1,2,4]

- Insomnia is one of the most frequent and distressing symptoms in cancer patients and the clinical impact on patients is often underestimated. [6-9]

- Insomnia in cancer patients may be linked to uncontrolled physical and / or psychological symptoms.[6-8,10-13]

2. GUIDELINES

- It is important to take a sleep history from all patients. The nature of any disturbance, its duration and effect on every day functioning should be documented in the case notes. [6,7,9] [Level 4]

- A cause of the sleep disturbance should be identified where possible (see Table 2). [1,6-8,10-15] [Level 4]

Table 2 Causes of Insomnia [1,6-8,10-15] [Level 4]	
Age related (i.e. extension of normal physiological changes)	Neurological (e.g. cognitive impairment, delirium, restless legs)
Bladder / bowel symptoms (e.g. nocturia, high output stoma, short bowel syndrome)	Pain
Environmental (e.g. noise levels, light)	Psychiatric & Psychological (e.g. anxiety, hallucinations, nightmares, depression)
Medication induced (e.g. diuretics, corticosteriods, psychostimulants, bronchodilators, stimulant anti-depressants)	Respiratory (e.g. breathlessness, obstructive sleep apnoea)
Medication withdrawal (e.g. benzodiazepines)	Substance withdrawal (e.g. alcohol, nicotine, recreational drugs)
Metabolic (e.g. restless legs from low ferritin)	Other uncontrolled symptoms (e.g. sweating, pruritus)

- Pain, depression and anxiety are common causes of insomnia and should be identified and treated as appropriate.[10-13] [Level 4]

- Drugs which may contribute to insomnia (e.g. corticosteroids, diuretics, stimulant antidepressants and other stimulants) should be reviewed and discontinued where possible. If corticosteroids are required they should be administered before 2pm. [6,7,16] [Level 4]

- The management of insomnia may include non-pharmacological and pharmacological measures.[1,6-8,14,15] [Level 4]

- Non-pharmacological measures are outlined in Table 3. [15,17]

Table 3 Psychological and behavioural therapies for insomnia [15,17] [Level 4]
Stimulus control therapy Behavioural recommendations designed to reinforce the association between the bed or bedroom and sleep, and to strengthen a consistent sleep-wake schedule: a) go to bed only when sleepy; b) get out of bed when unable to sleep; c) use the bed for sleep only (no reading, problem-solving in bed); d) arise at the same time every morning; e) avoid napping.
Sleep restriction therapy A method that limits the time spent in bed as close as possible to the actual sleep time, thereby producing a mild sleep deprivation, which results in more consolidated sleep. The sleep window is gradually increased throughout a few days or weeks until optimum sleep duration is achieved.
Relaxation training Clinical procedures aimed at reduction of somatic tension (e.g, progressive muscle relaxation, autogenic training) or intrusive thoughts (e.g. imagery training, meditation) interfering with sleep. Most relaxation techniques need professional guidance initially and daily practice for a few weeks.
Sleep hygiene education General guidelines about health practices (e.g. diet, exercise, substance use) and environmental factors (e.g. light, noise, temperature) that might promote or interfere with sleep: a) avoid stimulants (e.g. caffeine, nicotine) for several hours before bedtime b) avoid alcohol around bedtime as it fragments sleep during the second half of the night; c) exercise regularly, it can deepen sleep d) do not watch the clock; e) keep the bedroom environment dark, quiet, and comfortable.
Cognitive therapy Psychotherapeutic method aimed at alleviating excessive worries and revising misconceptions about sleep, insomnia, and daytime consequences. Specific targets include unrealistic sleep expectations, fear of the consequences of insomnia, and misconceptions of the causes of insomnia.
Cognitive behavioural therapy A combination of any of the above behavioural (e.g., sleep restriction, stimulus control instructions, relaxation) and cognitive procedures.

- A ward environment conducive to sleep will include:

  - A differentiation between light and dark during day time and night time hours.
  - Adapting timing of patient care interactions: e.g. clustering and quiet times.
  - Providing a structured bedtime routine.
  - Use of ear plugs and eye masks for unavoidable disruptions [18,19] [Level 4].

- Pharmacological measures should be used with caution. Medication should be prescribed at the lowest possible dose and for the shortest period of time. Tables 4 and 5 list some of the commonly used drugs in the management of insomnia. [1,6,7,15,16,20-22] [Level 4]

Table 4 Hypnotic drugs used in the management of insomnia [1,6,7,15,16,20-22] [Level 4]

Medication	Oral dose	Class of drug	Notes
Lorazepam	500microgram – 1mg nocte (sublingual)	Short acting benzodiazepine	Little hangover effect, promotes sleep onset and maintenance
Temazepam	10mg – 40mg nocte	Intermediate acting benzodiazepine	Monitor for hangover effect. Promotes sleep onset and maintenance
Zopiclone	3.75mg – 15mg nocte	Short acting cyclopyrrolone	Little hangover effect, promotes sleep onset

Table 5 Sedating drugs which may be used in the management of insomnia in the presence of other symptoms [1,6,7,15,16,20-22] [Level 4]

Symptom	Medication	Oral dose	Class of drug	Notes
Delirium	Haloperidol	See guidelines for management of delirium	Long acting dopamine antagonist	Haloperidol may be used for the management of nightmares and hallucinations but it has little sedative effect.
Depression	Mirtazapine	7.5mg – 15mg nocte	Long acting NaSSA	Useful if co-existing depression, lower doses more sedative e.g. ≤15mg
Pain Depression	Amitriptyline	10mg – 75mg nocte	Tricyclic antidepressant	Caution in cardiac disease, concurrent SSRI use, glaucoma and history of urinary retention
Pain	Clonazepam	500 microgram – 8mg nocte	Benzodiazepine	Long acting benzodiazepine

- Caution must be exercised in older patients as many of the drugs used in the management of insomnia cause postural hypotension and urinary retention. These may in turn lead to poor mobility, falls and increasing agitation.[16,20] [Level 4]

- Zopiclone is a short acting cyclopyrrolone and aims to initiate sleep. A dose of 7.5mg is recommended, with 3.75mg initially for older patients. Maximum

plasma concentration is achieved after 1½ - 2 hours and is not affected by food. The most common side effect is a metallic taste. Withdrawal and rebound insomnia have occasionally been observed on discontinuation of treatment, mainly in association with prolonged treatment. There may be an increased risk of falls. [16,20] [Level 4]

- All benzodiazepines have a significant side effect profile. These include dizziness, confusion, ataxia, dependence, paradoxical agitation and postural hypotension. [16,20] [Level 4]

3. STANDARDS

1. Assessment and documentation of a patient's quality of sleep should be part of specialist palliative care assessment. [1,6-8] [Grade D]

2. For patients with insomnia, reversible causes should be identified, treated where appropriate and recorded in the case-notes. [1,6-8] [Grade D]

3. Phamacological and non-pharmacological measures taken to improve sleep quality should be reviewed and effectiveness documented. [1,6,7,15,17,23] [Grade D]

4. Patients commenced on hypnotic medication should be reviewed within 7 days for inpatient settings and within 14 days for community setting. Ineffective medication should be discontinued following dose optimization [1,6-8] [Grade D]

4. REFERENCES

1. Wilson S, Nutt D, Alford C, Argyropoulos S, Baldwin D, Bateson A, et al. British Association for Psychopharmacology consensus statement on evidence-based treatment of insomnia, parasomnias and circadian rhythm disorders. J*ournal of Psychopharmacology* 2010; **24(11)**:1577-1601.

2. Diagnostic Classification Steering Committee, Thorp MJ, Chairman. *ICSD-International Classification of Sleep Disorders: Diagnostic and Coding Manual*. Rochester, Minnesota: American Sleep Disorders Association; 1990.

3. Edinger J, Bonnet M, Bootzin R, Doghramji K, Dorsey C, Espie C, et al. Derivation of research diagnostic criteria for insomnia: Report of an American Academy of Sleep Medicine Work Group. *Sleep* 2004;**27(8)**:1567-96.

4. ICD-10. *The ICD-10 Classification of Mental and Behavioural Disorders - clinical descriptions and diagnostic guidelines.*. First ed. Geneva: World Health Organization; 1992.

5. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders: DSM-IV-TR*. 4th ed., text revision ed. Washington, DC: American Psychiatric Association; 2000.

6. Hugel H, Ellershaw J, Cook L, Skinner J, Irvine C. The prevalence, key causes and management of insomnia in palliative care patients. *J Pain Symptom Manage* 2004;**27(4)**:316-321.

7. Kvale EA, Shuster JL. Sleep disturbance in supportive care of cancer: A review. *J Palliat Med* 2006;**9(2)**:437-450.

8. Sateia MJ, Lang BJ. Sleep and Cancer: Recent Developments. *Curr Oncol Rep* 2008;**10(4)**:309-318.

9. Stepanski E. Clinical evaluation and treatment of insomnia in patients with cancer. *Comm Oncology* 2007;**4(4)**:245-250.

10. Delgado-Guay M, Yennurajalingam S, Parsons H, Palmer JL, Bruera E. Association between self-reported sleep disturbance and other symptoms in patients with advanced cancer. *J Pain Symptom Manage* 2011;**41(5)**:819-827.

11. Wells-Di Gregorio S, Gustin J, Marks D, Taylor R, Coller K, Magalang U. Worry as a Significant Predictor of Insomnia among Palliative Care Patients with Advanced Cancer. *J Pain Symptom Manage* 2010;**39(2)**:335-336.

12. Mystakidou K, Parpa E, Tsilika E, Gennatas C, Galanos A, Vlahos L. How is sleep quality affected by the psychological and symptom distress of advanced cancer patients? *Palliat Med* 2009;**23(1)**:46-53.

13. Eyigor S, Eyigor C, Uslu R. Assessment of pain, fatigue, sleep and quality of life (QoL) in elderly hospitalized cancer patients. *Arch Gerontol Geriatr* 2010;**51(3)**:e57-e61.

14. Morin CM, Savard J, Ouellet M, Daley M. *Insomnia. Handbook of Psychology*: John Wiley & Sons, Inc.; 2003.

15. Morin CM, Benca R. Chronic insomnia. *The Lancet* 2012;**379(9821)**:1129-1141.

16. Twycross R, Wilcock A. Palliative Care Formulary. 4th ed. Nottingham: palliativedrugs.com; 2011.

17. Morgenthaler, T., Kramer, M., Alessi, C., Friedman, L., Boehlecke, B., Brown, T., Coleman, J., Kapur, V., Lee-Chiong, T., Owens, J., Pancer, J., Swick,T. Practice parameters for the psychological and behavioral treatment of insomnia: An update. An American Academy of Sleep Medicine Report. *Sleep* 2006;**29(11)**:1415-1419.

18. Gibson J, Grealish L. Relating palliative care principles to the promotion of undisturbed sleep in a hospice setting. *Int J Palliat Nurs* 2001;**7(3)**:140-5.

19. Richardson A, Thompson A, Coghill E, Chambers I, Turnock C. Development and implementation of a noise reduction intervention programme: a pre- and post-audit of three hospital wards. *J Clin Nurs* 2009;**18(23)**:3316-3324.

20. Joint Formulary Committee. British National Formulary 63. British Medical Association and Royal Pharmaceutical Society of Great Britain. 2012.

21. Hirst A, Sloan R. Benzodiazepines and related drugs for insomnia in palliative care. *Cochrane database of systematic reviews* 2002(4):CD003346.

22. Henderson M, MacGregor E, Sykes N, Hotopt M. The use of benzodiazepines in palliative care. *Palliat Med* 2006;**20(4)**:407-412.

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