CE Symptom Management Series

"Nurse, I Can't Sleep!"

Approaches to Management of Insomnia in Oncology Patients

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Insomnia frequently presents during cancer therapy in a symptom cluster along with pain, fatigue, and mood disturbance, negatively affecting functional status and quality of life in many patients. Patients often first report their sleep disturbance to nurses. During each clinical contact across all oncology practice settings, nurses should inquire, ''Do you experience difficulty sleeping?'' and ''Do you have difficulty falling asleep and/or staying asleep?'' The National Institutes of Health Consensus and the American Academy of Sleep Medicine Practice Parameters recommend Cognitive Behavioral Therapy for Insomnia to be standard treatment based on the high level of empirical support. The most frequently used therapies utilized in oncology clinics include stimulus control therapy, sleep restriction therapy, relaxation therapies, paradoxical intention, and sleep hygiene education. Cognitive Behavioral Therapy for Insomnia has similar efficacy with more sustainability when compared with sleep medicines. When adequately trained with proper assessment skills, nurses can identify contributing factors for sleep disturbance and are in a better position to intervene across all settings of cancer care and improve patient and family caregiver quality of life.

KEY WORDS

Cognitive Behavioral Therapy for Insomnia, insomnia, oncology, quality of life

CASE STUDY

It is 1 AM on the Bone Marrow Transplant Unit, and a good night's sleep is out of reach for many of these suffering patients. One patient calls out at midnight and tells his nurse, "I just can't sleep, please give me something to help me." He has a diagnosis of acute myelogenous leukemia and is 5 days post–allogeneic stem cell transplant with a long journey looming ahead. He is febrile, agitated, confused, nauseous, and in pain. He appears to be in acute distress and is exhausted. He asks for his nightly as-needed dose of temazepam. His beside nurse brings the dose, and he falls asleep within 30 minutes. He is restless, however, and soon wakens asking for nausea and pain medication. It is difficult to tell if his pain and nausea are the source of his difficulty sleeping or if he is asking for medications that may help him to sleep. He receives a dose of oxycodone at 2 o'clock for his chronic back pain, along with 4 mg intravenously administered ondansetron for his nausea, and he continues to toss and turn through the night.

The next morning, he is lethargic and disoriented. He vividly describes auditory and visual hallucinations of the previous night. He fights his typical morning routine of breakfast and reading the newspaper, insisting instead on a dark room with closed shades and no interruptions. His wife asks the medical team, "Why does the nurse give him a sleeping pill at night when he sleeps all day? Of course he isn't tired. Why are you making him more confused? Why does he need all of these extra medications? At home, he sleeps well and lives with his chronic back pain. I don't understand what we are doing."

SIGNIFICANCE OF THE PROBLEM

Sleep-wake disturbances have been defined as "perceived or actual alterations in night sleep with resultant daytime impairment"[1] Insomnia is the most prevalent sleep disturbance in the oncology population. Whereas 10% to 15% of the general population experience sleep-wake cycle disturbances, 33% to 50% of oncology patients are estimated to experience insomnia.[2] A diagnosis of insomnia syndrome is contingent upon the following criteria, according to Savard and Morin's[3] guidelines: difficulty sleeping characterized by issues with either initiating sleep (≥30 minutes) or maintaining sleep (>30 minutes of nocturnal awakenings and sleep efficiency <85%), resultant significant impairment of daytime functioning, and an incidence of at least 3 nights per week.

Insomnia has long-lasting consequences on a patient's physical, psychological, social, and spiritual well-being.

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This ongoing sleep disturbance contributes to physical symptoms (such as pain), fatigue, cognitive impairments (such as memory and concentration), mood disturbances, psychiatric disorders, longevity, and immunosuppression.[3] Although tossing and turning may seem inconsequential in the moment, the cumulative effect may truly impact the patient's outcome. Evidence-based interventions to treat insomnia should lead to positive sleep outcomes, including the ability to fall asleep, maintain sleep through the night, and to wake feeling rejuvenated using minimal sleep aids.[4]

Nurses frequently witness their patients experiencing sleep disturbances, yet they may not have been educated on the long-lasting effects on daytime sleepiness, functional ability, and quality of life.[5] Sleep disturbances in oncology patients aggravate other symptoms and adverse effects of treatment, such as pain and mood. Treating sleep disturbances may promote symptom management of pain and mood, as well as increased physical, emotional, social, and mental functioning, and overall quality of life.[4]

The 2010 study of Palesh et al[6] evaluated the prevalence, demographics, and psychological associations in 823 patients undergoing chemotherapy. These patients reported insomnia at about 3 times the rate of the general population. There was no significant difference identified in the prevalence of insomnia in men versus women. Younger cancer patients (<50 years) were found to have higher rates of insomnia and a higher overall symptom burden than do older patients (>64 years) during chemotherapy. These results are significant because female sex and older age are associated with increased risk for insomnia in the general population. Insomnia symptoms were significantly higher in white patients versus nonwhite patients. Lastly, they identified significant differences in reported insomnia symptoms across specific cancer diagnoses. The lowest prevalence of insomnia was identified among patients with alimentary cancers, and the highest prevalence in patients with lung cancer.[6]

In a study of 69 stem cell transplant recipients hospitalized in 2011, 87% of women and 67% of men reported insomnia, attributing the sleep disturbance to frequent toileting and staff interruptions for care.[7] Stem cell transplantation recipients are, unfortunately, not alone. Insomnia is present across the continuum of cancer care. Before a cancer diagnosis, many patients already have a long-standing history of sleep disturbance. A cancer diagnosis itself may trigger the beginning of insomnia, causing fear, anxiety, and restlessness. Adverse effects associated with chemotherapy and radiation treatments, as well as the treatments themselves, can cause patients to experience sleep disturbance. Insomnia is found in remission, survivorship, recurrence, supportive care, and the transition to end-of-life care. Palesh and colleagues[6] wrote, "Insomnia is prevalent, under recognized, undermanaged, and understudied among patients with cancer receiving chemotherapy."

Nurses have the distinct ability to influence patient-centered outcomes and treatment-related symptoms. When adequately trained with proper assessment skills, nurses can identify contributing factors for sleep disturbance and are in a better position to intervene across all settings of cancer care. Currently, no evidence-based interventions for sleep-wake disturbances exist that are categorized as recommended for practice by the Oncology Nursing Society's (ONS's) Putting Evidence Into Practice Program. "By enhancing sleep, nurses help oncology patients recover from chemotherapy, gain strength, fight infection, and enhance quality of life"[7] (Table 1).

IMPACT ON QUALITY OF LIFE

The City of Hope National Medical Center Quality of Life Model encompasses the following 4 domains: physical, psychological, social, and spiritual well-being.[8] Ferrell[9] explains, "inclusion of quality-of-life assessment in practice is a valuable message to patients that we care about the person with cancer and that quality of life is the ultimate goal of oncology practice."

Valuable communication between patients and providers is essential to assess quality of life. Tools, such as the Functional Assessment of Cancer Therapy–General,[10] are useful in evaluating patients' quality of life at all stages of treatment.[11] Insomnia impacts all domains of a patient's quality of life and therefore demands thorough assessment and management. Regardless of age, gender, treatment history, and tumor stage at diagnosis, insomnia was found to be a strong correlate of quality of life during a patient's first 3 months of treatment.[12] Furthermore, insomnia frequently presents during cancer therapy in a symptom cluster along with pain, fatigue, and mood disturbance, negatively affecting functional status and quality of life in elderly patients[13] (Figure).

ETIOLOGY

Insomnia frequently presents during stressful experiences and is often increased by behavioral or cognitive components.[14] It is typically secondary to physical and psychological factors related to both the disease process and treatment regimen specific to the cancer diagnosis. Identifying and treating any underlying causes of sleep disturbance, such as pain, depression, or anxiety, are the primary goal.[15]

Paraneoplastic syndromes (T cells mistakenly attacking normal cells in the nervous system) related to steroid production, symptoms connected to tumor invasion (ie, draining lesions, pain, fever, cough, dyspnea, pruritus), and adverse effects of cancer treatment can aggravate sleep disturbances.[16] In paraneoplastic syndromes, such as myasthenia gravis, limbic or brainstem encephalitis, or sensory neuralgia, the body's T cells mistakenly attack normal cells in the

TABLE 1 Risk Factors for Insomnia in Oncology Patients

Factors related to malignancy
• Pain
• Nausea and vomiting
• Headaches and seizures
• Shortness of breath
• Tumor impinging on nerves or viscera
• Paraneoplastic syndromes
Factors related to treatment
• Steroids
• Biological modifiers
• Hormonal therapy
• Radiation therapy
• Chemotherapy
• Fatigue
• Devices for chemotherapy
Factors related to environment
• Change in routine
• Hospital and health professionals (white coat syndrome)
• Hospital lodges and unfamiliar environment
Medications
• Sedatives
• Hypnotics
• Antiepileptic
• Steroids
• Caffeine
Psychosocial factors
• Depression
• Anxiety
• Effect on relationships
• Financial
Neoplastic factors
• Pain
• Nausea and vomiting
• Headaches and seizures

(continues)

TABLE 1 Risk Factors for Insomnia in Oncology Patients, Continued

Adapted from Koul and Dubey[15] with permission from The Internet Journal of Pain, Symptom Control, and Palliative Care (www.ispub.com).

nervous system.[16] These syndromes can result in difficulty walking or swallowing, loss of fine motor coordination, memory loss, vision problems, vertigo, and sleep disturbances.[16]

Disease-related symptoms and treatment-related adverse effects can interfere with sleep.[15] Patients with Hodgkin's lymphoma frequently complain of horrible pruritus, often waking them at night and resistant to medication. Patients with head and neck cancer report unrelenting pain and shortness of breath from their tumor and are often afraid they will stop breathing while they sleep. Treatment adverse effects, such as pain, anxiety, night sweats, gastrointestinal disturbance, genitourinary disturbance, respiratory disturbance, and fatigue, can alter the patient's sleep-wake cycle.[15] Patients with graft-versus-host disease following stem cell transplant are frequently awake all night with persistent diarrhea. Patients with melanoma and renal cell carcinoma often experience sleep disturbance from their treatment with interferon and interleukin.[15]

Medications used as treatments and to combat adverse effects, such as vitamins, corticosteroids, neuroleptics for nausea/vomiting, and sympathomimetics for dyspnea, can affect sleep patterns.[15] Patients premedicated with dexamethasone (Decadron) for chemotherapy regimens are frequently awake all night and cannot understand why they cannot fall asleep. Insomnia can be caused by the continuous use of sedatives, hypnotics, chemotherapeutic agents, anticonvulsants, and other medications; insomnia can also be caused by withdrawal from central nervous system depressants, benzodiazepines, tranquilizers, tricyclic and monoamine oxidase inhibitor antidepressants, and illicit drugs.[15] The unavoidable polypharmacy that comes with a cancer diagnosis—chemotherapy, antianxiety drugs, sleep medications, and so on—often adds to the cycle of daytime sleep and nighttime insomnia. In addition to physiological and treatment-induced complications, oncology patients are frequently hospitalized, and sleep is further compromised by hospital routines, treatment schedules, environmental noise, and anxiety.[2]

The anxiety, uncertainty, and fear that accompany every cancer diagnosis are truly challenging to measure

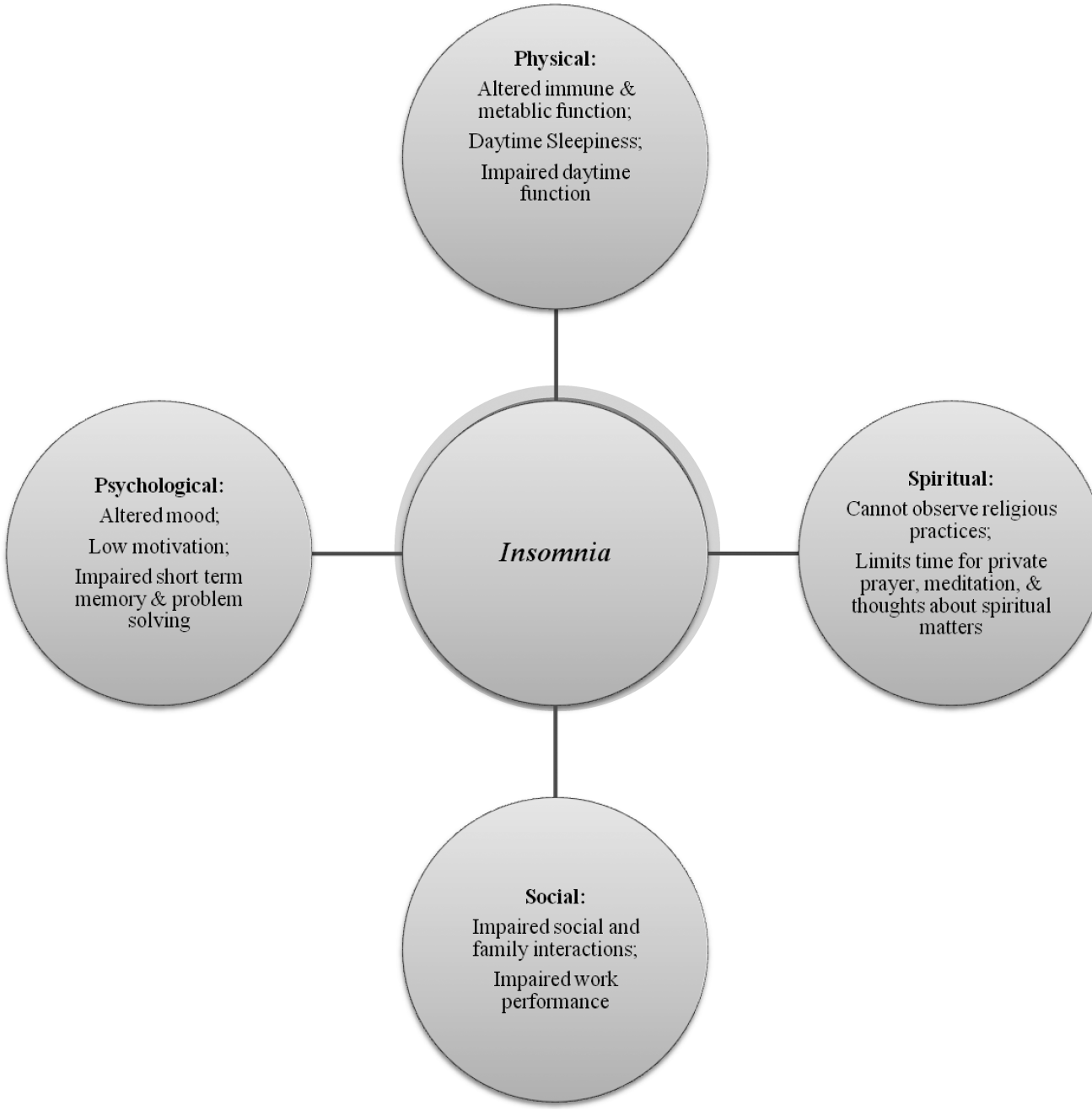

FIGURE. Relationship of insomnia and quality of life.

and treat. So often as the lights dim in the hospitals and visitors go home for the night, patients have the time and quiet to reflect on their worries and fears. So many nurses face difficult questions from patients during the nightshift—"Why is this happening to me?" "Is this treatment going to work?" "Am I dying?" The fear of adverse effects, of treatment failure, of recurrence, of abandonment, and mostly fear of the unknown all come to light in the dark. Assessing these risk factors can often be as challenging as treating them.

ASSESSMENT

Thorough assessment and measurement of sleep disturbance in oncology patients have been recognized as a significant challenge in health care. Patients' experiences

of sleep disturbance are unique, and capturing these perceptions is fundamental to understanding and treating the problem.[17]

The ONS's State-of-the-Science Conference on Sleep/Wake Disturbances in People With Cancer and Their Caregivers reviewed the literature to identify 9 parameters of sleep disturbance for measurement and assessment in oncology patients.[18] The parameters include total sleep time, sleep latency, awakenings, wake time after sleep onset, napping during the day, excessive daytime sleepiness, quality of perceived sleep, stability of circadian rhythms, and sleep efficiency.[18]

Patients often first report their sleep disturbance to nurses. During each clinical contact across all oncology practice settings, nurses should inquire, "Do you experience difficulty sleeping?" and "Do you have difficulty falling asleep and/or staying asleep?"[19] A detailed sleep assessment includes patient's sleep history and patterns (previous sleep disturbance, exercise, caffeine, alcohol, tobacco use), current risk factors related to diagnosis (treatment modality and adverse effects), pain, anxiety, fear), and environmental factors (noise, light, interruptions). A thorough history is helpful in determining the treatment plan.[20]

The current recommendation for the oncology population is to use both subjective and objective means to measure sleep-wake cycle disturbance.[4] The Pittsburgh Sleep Quality Index remains the standard of self-reported instruments for the measurement of insomnia.[21] The Insomnia Severity Index[22] has also been validated as an appropriate screening tool for oncology patients. An alternative is having patients keep a daily diary of sleep-wake patterns for 2 weeks.[23] Either of these assessments can be initiated by nurses and provide vital information for the practitioner to diagnose a sleep disturbance.

Polysomnography is the standard for objective measurement of sleep. The procedure includes an overnight recording of the patient's sleep. An electroencephalographic channel monitors sleep stage; 2 electroencephalographic channels evaluate horizontal and vertical eye movements to assess rapid eye movement (REM) sleep and the presence of slow-rolling eye movements that correspond with the onset of sleep; an electromyographic channel records atonia during REM sleep; 2 additional channels monitor airflow. Polysomnography (PMG) can monitor several other parameters, including pulse oximetry, respiratory effort, electrocardiography, and snoring.[23] Although PMG provides valuable objective data, it is most commonly used in specialized sleep clinics and sleep research and can be limited within the context of a clinic setting. Wrist actigraphy is a noninvasive tool used to measure 24-hour sleep activity cycle by assessing wrist movement. Actigraphy correlates with patients' self-report of sleep quality and shows promise as a quantitative measurement of sleep-wake cycle disturbance.[24] Both polysomnography and actigraphy, however, have limited functionality for nurses, as they are frequently limited to a sleep clinic or research setting.

TREATMENT MODALITIES

Insomnia in oncology patients has multiple etiologies, often disease-related, but sometimes it is a symptom that the patient has struggled with prior to the cancer diagnosis. As a result, insomnia management requires multimodal treatment, including nonpharmacological and pharmacological components.[15]

In 2006, the American Academy of Sleep Medicine Task Force conducted a review of literature published since 1999 and graded the evidence regarding the available nonpharmacological insomnia treatments.[25] The task force concluded that chronic primary and secondary insomnia can be effectively treated with psychological and behavioral interventions. Chronic primary insomnia had the best treatment responses from stimulus control therapy, relaxation training, or cognitive behavior therapy. Each modality is individually effective. For secondary insomnia, sleep restriction therapy, multicomponent therapy (not including cognitive therapy), biofeedback, and paradoxical intention have effective evidence-based results when used individually. Sleep hygiene education, imagery training, and cognitive therapy had insufficient evidence-based support to recommend as single or complementary therapies.[25]

The National Institutes of Health holds conferences to produce consensus statements on valid and controversial topics in medicine, such as the recommendations for treatment of insomnia. The National Institutes of Health Consensus and the American Academy of Sleep Medicine Practice Parameters recommend Cognitive Behavioral Therapy for Insomnia (CBTi) to be standard treatment based on the high level of empirical support.[26] In the oncology population, it has been classified as "likely to be effective" by the ONS's Putting Evidence Into Practice. Cognitive-behavioral therapy, pioneered in the 1980s, is proven effective in treating insomnia, depression, generalized anxiety, obsessive-compulsive, and eating disorders. Cognitive therapy targets negative perceptions from prior experiences. Behavioral therapy uses positive and negative reinforcement to modify behaviors in the present. The goal of CBTi is to lessen high-risk behaviors and patterns below the insomnia threshold and incidentally unlearn the hyperarousal response. The most frequently used CBTi therapies utilized in oncology clinics include stimulus control therapy, sleep restriction therapy, relaxation therapies, paradoxical intention, and sleep hygiene education.[27] Additional evidence from meta-analyses and systematic reviews is required to classify CBTi as "recommended for practice" by ONS's Putting Evidence Into Practice.

In a randomized controlled trial by Espie et al,[14] CBTi was tested against treatment as usual in 150 patients recently treated for breast, prostate, colorectal, or gynecologic malignancies. Sleep was measured objectively (actigraphy, Pittsburgh Sleep Quality Index) and subjectively (self-report sleep diaries). Cognitive Behavioral Therapy for Insomnia was proven clinically effective with improvement in subjective report of time taken to fall asleep and nocturnal wake time. Actigraphy measurement showed a less significant, modest effect. The CBTi group reported less fatigue, anxiety, and depression, with increased physical and functional quality of life when compared with the treatment-as-usual group.[14]

A randomized controlled trial by Morin et al[28] showed when treating noncancer patients with persistent insomnia adding zolpidem during the first 6 weeks of CBTi resulted in increased sleep time. Discontinuing the medication after the acute period of treatment, however, produced the best long-term results.[28] Additional randomized controlled trials have repeated consistent results. Cognitive Behavioral Therapy for Insomnia has similar efficacy with more sustainability when compared with sleep medicines.[26]

In addition to CBTi, the other components of nonpharmacological treatment for insomnia include complementary therapies and environmental strategies. Recently, *Sleep Medicine Reviews* conducted a systematic review of randomized controlled trials to determine the effectiveness of complementary and alternative medicine in insomnia. Many of the studies regarding homoeopathy, massage, and aromatherapy did not meet inclusion criteria because of small sample size or lack of control. Acupressure, tai chi, and yoga had evidence-based results in treating insomnia, whereas acupuncture and L-tryptophan showed mixed results. Herbal medicines, specifically valerian, did not significantly treat insomnia.[29]

Environmental strategies focus on noise reduction, light reduction, and scheduling uninterrupted sleep time.[20] These factors are especially difficult to adjust in inpatient settings. In a study of 69 stem cell transplant recipients hospitalized in 2011, 87% of women and 67% of men reported insomnia, attributing the sleep disturbance to frequent toileting and staff interruptions for care.[7] Nurses can recommend changes to the hospital environment that may minimize sleep disturbances (Table 2).

When nonpharmacological treatment methods are not effective alone, practitioners must consider using them in conjunction with pharmacological treatment. Table 3 summarizes Food and Drug Administration (FDA)–approved medications for the treatment of insomnia, common dosages, duration of action, and nursing considerations for practice.[2] The benefit of these medications must be balanced against the risk of interaction among other medications (prescribed, over-the-counter, herbal supplements). Practitioners must educate patients that, despite the growing support for herbals and natural supplements, there is no guarantee of quality control without FDA regulation. Special consideration must be given to both short- and long-acting sleep aids. Short-acting medications pose the risk of patients waking during the night, whereas medications with longer half-lives may contribute to daytime sleepiness and affect daily activities.[4] The benefit versus risk must also be considered when safely administering sleep aids to elderly patients.

TABLE 2 Sleep Hygiene Education for Oncology Patients

Outpatient	Inpatient
• Sleep and wake at regular times	• Keep skin clean and dry
• Relax before bedtime	• Keep linens clean, dry, and wrinkle-free
• Create a dark, comfortable sleep environment	• Ensure adequate blankets for warmth
• Avoid watching television or working in the bedroom	• Regulate fluid intake
• Get ample daylight during nonsleep hours	• Encourage bladder and bowel elimination before sleep
• Limit daytime naps	• Promote optimal bowel function
• Limit caffeine and alcohol	• Encourage high-protein snack 2 h before bedtime
• Get regular exercise no closer than 3 h before bedtime	• Encourage patient to wear loose, soft clothing
	• Reposition as needed
	• Encourage activity during waking hours
	• If safety allows, close patient door and turn off lights
	• Minimize staff interruption and noise

TABLE 3 Pharmacological Management of Insomnia

Drug Category	Medication	Dose	Comments
Nonbenzodiazepine benzodiazepine receptor agonist	Zaleplon (Sonata)	5-20 mg	Useful for problems falling asleep only
	Zolpidem tartrate (Ambien)	5-10 mg	Useful for problems falling asleep only
	Zolpidem tartrate extended-release (Ambien CR)	6.25-12.5 mg	Biphasic release; useful for problems both falling asleep and staying asleep; do not crush or split tablets
	Eszopiclone (Lunesta)	1-3 mg	Useful for problems both falling asleep and staying asleep; do not take with or right after meal
Benzodiazepine	Alprazolam (Xanax)	0.25-2 mg	Higher risk of withdrawal; adverse effects: lack of motor coordination, falls, and cognitive impairment
	Lorazepam (Ativan)	0.5-4 mg	Adverse effects: lack of motor coordination, falls, and cognitive impairment
	Clonazepam (Klonopin)	0.5-4 mg	Adverse effects: lack of motor coordination, falls, and cognitive impairment
	Temazepam (Restoril)	15-30 mg	Adverse effects: lack of motor coordination, falls, and cognitive impairment
Melatonin receptor agonist	Ramelteon (Rozerem)	8 mg	Little negative effect on cognition, somnolence, motor coordination, or nausea; useful for problems falling asleep only
Antihistamine	Diphenhydramine (Benadryl)	25-100 mg	Useful for problems falling asleep only; good side-effect profile
	Hydroxyzine (Vistaril, Atarax)	10-100 mg	Useful for problems falling asleep only; anticholinergic adverse effects
Tricyclic antidepressant	Doxepin (Sinequan)	10-25 mg	Lower doses used for treatment of primary insomnia when antidepressant effect not needed; risk of anticholinergic adverse effects and weight gain
	Amitriptyline (Elavil)	10-15 mg	Lower doses used for treatment of primary insomnia when antidepressant effect not needed; risk of anticholinergic adverse effects and weight gain
	Nortriptyline (Pamelor)	10-50 mg	Risk of anticholinergic adverse effects and weight gain
Second-generation antidepressant	Trazodone (Desyrel)	25-200 mg	Risk of orthostatic hypotension and falls
	Mirtazapine (Remeron)	7.5-45 mg	If depression not a concern, 7.5-15 mg best for sleep, hot flashes, increased appetite, and less morning sedation; be aware of fall risk
Antipsychotic	Quetiapine (Seroquel)	25-100 mg	Risk of weight gain, metabolic syndrome, abnormal/involuntary movements; possible cardiovascular effects (eg, prolonged QT interval)
	Chlorpromazine (Thorazine)	10-50 mg	Risk of weight gain, metabolic syndrome, abnormal/involuntary movements; possible cardiovascular effects (eg, hypotension)
Chloral derivative	Chloral hydrate	0.5-1.0 g	Used mainly for sleep maintenance; risk of gastric irritation; risk of dependence and withdrawal; lethal in overdose

Adapted from National Cancer Institute. Sleep Disorders. Updated January 9, 2013. http://www.cancer.gov/cancertopics/pdq/supportivecare/sleepdisorders/HealthProfessional/Table1. Accessed January 2013.

Patients and families frequently ask nurses about the effectiveness of melatonin. Melatonin is a hormone produced in the pineal gland, secreted through the bloodstream in the dark or often at nighttime to regulate the sleep cycle.[30] The FDA approved ramelteon, a melatonin receptor agonist, as a treatment option for insomnia. Liu and Wang's[31] 2012 systematic review with meta-analysis evaluated the efficacy and safety of this drug. Subjective and PMG sleep latency, total sleep time, and latency to REM were significantly improved with ramelteon. Subjective sleep latency, however, was reduced only in the 18- to 64-year-old subgroup. Although the response looks promising, well-designed, double-blind, randomized controlled trials are needed to investigate higher doses in geriatric patients, comparison to sedatives, and adverse effects[31] (Table 3).

IMPLICATIONS FOR NURSING PRACTICE

Symptom management is at the heart of nursing's scope of practice. It is the bedside nurse who spends countless hours with the patients, assessing their sleep habits, how they fluctuate based on treatment regimens, and how insomnia impacts the patients' quality of life. Nurses play a unique role and have the opportunity to utilize both pharmacological and nonpharmacological treatments to help patients attain optimal sleep.[11]

There is certainly room for growth and development of the role of the nurse in the screening, assessment, treatment, and education regarding insomnia. With adequate training, advanced practice nurses can educate nurses in brief CBTi interventions appropriate for inpatient and outpatient oncology settings.[27] In the trial of Espie et al,[14] oncology nurses conducted the CBTi intervention, which shows the adaptability to oncology clinic settings. Future nursing curricula must require education in sleep hygiene, insomnia, and evidence-based interventions.

In order to incorporate sleep assessment and intervention, preparation must begin in undergraduate nursing education. An overview of normal sleep, the prevalence of sleep disturbance in oncology patients, assessment skills, and evidence-based interventions must be included in nursing curricula. Clinical competencies can be included in medical-surgical and psychiatric nursing course work. Continuing education and staff development programs must educate nurses on advances in therapies, as well as refreshers in good sleep hygiene to incorporate in patient care.[18]

IMPLICATIONS FOR FURTHER RESEARCH

Although several promising therapies are available, no single therapy has been proven effective for all patients experiencing insomnia. Further research is needed to guide an algorithm for clinical decision making. It is unclear when CBTi or medication should be used as initial therapy and, when ineffective, what should be used as second-line treatment.[23] There is also a need for additional research on other nonpharmacological treatments, such as aromatherapy, as potential therapy.

Currently, there is a lack of evidence on the subject of insomnia in specific cancer populations. The future may hold knowledge of cancer-specific physiological, psychological, and behavioral factors that contribute to sleep disturbances during treatment and targeted approaches at symptom management.[6]

Lastly, there is a lack of evidence regarding the effectiveness of CBTi in patients at the end of life. Advanced metastatic disease frequently results in polypharmacy, cognitive impairment, and poorly controlled symptoms. Cognitive Behavioral Therapy for Insomnia typically requires 4 to 6 weeks for noticeable results. Depending on prognosis, initiating this therapy may not be beneficial.[27]

CONCLUSIONS

Returning to the bone marrow transplant unit, the medical team decided to make changes to the patient's plan of care. Nursing care focused on reorienting the patient to day and time by educating and implementing sleep hygiene. The day-shift nurse turned the lights on and raised the shades at 9 AM. She made a schedule for the day with the patient to ensure time for a brief early afternoon nap and scheduled morning and afternoon physical and occupational therapy to keep him active during the daytime. Through the evening, he had a high-protein snack, changes into comfortable pajamas, reads his book, goes to the bathroom, and is repositioned for comfort. When the nurse turns out his lights at 10 PM, he is asleep within the hour and remains comfortable through the night, only calling out for bathroom assistance and once for repositioning. His PRN order for zolpidem remains active yet was not needed this evening. The patient sleeps through the night and wakes at 6:30 AM, surprised and pleased when he realizes he has been asleep for 7 hours. The patient is alert through the day and an active participant in therapy. Sleep hygiene will be incorporated into his plan of care, and cognitive behavior therapy may be initiated if appropriate. The patient and his caregivers will be educated on sleep hygiene and cognitive behavior therapy and the benefit of continuing these interventions at home following discharge. Through the following week, the patient's mood is elevated, and he is able to focus on his healing and recovery.

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