Using a Symptom-Triggered Approach to Manage Patients in Acute Alcohol Withdrawal

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Each year, 15 million Americans are affected adversely by alcohol (Lohr, 2000; National Institute on Alcohol Abuse and Alcoholism, 2001; Saltz, 1998). An estimated 20% to 50% of all hospital admissions are related to the effects of alcohol abuse (Mayo-Smith, 1997; Ryan & Ottlinger, 1999). One in four medical-surgical patients admitted to the hospital has a problem with alcohol. Depending upon the presence of acute medical illness, risk factors for severe alcohol withdrawal and delirium tremens (DTs) have been estimated at 9% to 54% (Ferguson, Suelzer, Eckert, Zhou, & Dittus, 1996). Once a patient exhibits acute DTs, a severe complication of alcohol withdrawal, the mortality rate is 5% to 25% (Trevisan, Boutros, Petakis, & Krystal, 1998). Despite the high prevalence of patients admitted with a history of alcohol abuse, little has been done to provide nurses with a consistent process and the knowledge to care for the hospitalized patient in alcohol withdrawal (Ryan & Ottlinger, 1999).

Nurses working in a variety of general and specialized hospital units routinely care for patients who have abused alcohol. Acute alcohol withdrawal commonly occurs in medical-surgical patients being treated for other diagnoses (Jaeger, Lohr, & Pandratz, 2001; Ryan & Ottlinger, 1999). The patient’s alcohol dependence may not be recognized at the time of the initial assessment. Physical problems, which are the side effects of chronic alcohol use, or injuries incurred while acutely intoxicated are more likely to be recognized and addressed than the underlying problem of alcohol dependence. Left untreated, acute withdrawal symptoms emerge hours to days after alcohol intake has ceased (Lohr, 2000). Nurses can improve patient outcomes by assessing for withdrawal symptoms, providing interventions, and evaluating the outcomes of the treatment (Ryan & Ottlinger, 1999). The purpose of this article is to describe the physiologic mechanisms of alcohol withdrawal and use of a symptom triggered approach to treatment. The educational content and process for teaching more than 3,000 staff nurses will be outlined as core edu-
culation for medical-surgical staff nurses.

Physiology of Alcohol Withdrawal

Symptoms of alcohol withdrawal result from enhanced neurotransmitter excitability of the central nervous system (CNS). Constant exposure of alcohol affects the central nervous system by causing depression of neuronal excitability, impulse conduction, and neurotransmitter release (Lohr, 1995). The depression of neurotransmitter excitability causes an increase in the number of neurotransmitters. Once alcohol is removed, the number of neurotransmitters remains elevated, leading to CNS excitability which characterizes alcohol withdrawal syndrome (Saitz, 1998).

Diagnosis of Alcohol Withdrawal Syndrome (AWS) as defined in the Diagnostic and Statistical Manual of Mental Disorders IV-TR (American Psychiatric Association [APA], 2000) includes at least two of the following symptoms: autonomic hyperactivity; nausea or vomiting; visual, tactile, or auditory hallucinations; agitation; anxiety; and seizures. Additional criteria for the diagnosis of AWS include evidence that symptoms cause clinical distress and impairment in social and occupation functions and symptoms cannot be attributed to a general medical or psychiatric condition (APA, 2000).

Alcohol withdrawal syndrome can occur after the reduction or cessation of heavy and prolonged alcohol use. Symptoms of alcohol withdrawal typically begin several hours after blood alcohol concentrations decline, and they peak in intensity during the second day of abstinence (APA, 2000). Complicated symptoms such as delirium tremens are seen 2 to 4 days into the withdrawal time period (Lohr, 2000). Delirium tremens is a severe AWS characterized by disturbance of consciousness, perceptual disturbance, and marked autonomic hyperactivity (Saitz, 1998).

The symptoms of alcohol withdrawal are in response to the enhanced excitability of the CNS. Symptoms in the first 24 to 48 hours include headache, tremor, sweating, agitation, anxiety and irritability, nausea and vomiting, heightened sensitivity to light and sound, disorientation, difficulty concentrating, and in more serious cases, transient hallucinations. Two to 4 days into the withdrawal period, symptoms may progress to DTs. Symptoms of DTs include increased agitation and tremor; disorientation; hallucinations; and increase in heart rate, respiration, blood pressure, and pulse.

Risk Assessment

How does a staff nurse assess the patient’s risk for alcohol withdrawal? The occurrence and severity of alcohol withdrawal symptoms are difficult to predict and in general depend on the duration and amount of alcohol consumption. Identifying the at-risk patient is critical to allow timely initiation of treatment. Often an accurate history of alcohol intake is difficult to obtain as the patient and family may be reluctant to discuss alcohol use, and the patient’s description of alcohol quantity can be very subjective. Assessment for the potential for developing AWS is important at any of the entry points in the health care system. Physicians and/or nurses perform assessments in the emergency department or on the patient’s admission to the hospital unit. The general medical examination in an outpatient setting prior to a surgical procedure may also trigger the clinical staff to assess for withdrawal from alcohol.

Assessment screening questionnaires are valuable tools in identifying the patient with possible alcohol abuse or dependence. The CAGE questionnaire (Ewing, 1984) consists of four questions useful in diagnosing alcoholism that focus on:

- Cutting down
- Annoyance by criticism
- Guilty feeling
- Eye openers (Mayfield, McLeod, & Hall, 1974)

The acronym CAGE helps the health care provider to recall the questions. One positive answer to any of the four questions signals a problem with alcohol use. This tool, along with an assessment of the quantity and frequency pattern of alcohol intake, can provide the nurse with valuable information regarding the patient’s risk for AWS (Kirton, 2001; Lohr, 2000).

Clinical Management Of Alcohol Withdrawal

Nursing care and management of the patient in acute alcohol withdrawal include supportive care, symptom assessment, and pharmacologic therapy. Supportive nursing care includes careful, head-to-toe assessment and vital sign monitoring. Increases in heart rate, blood pressure, and respiratory rate can indicate worsening withdrawal symptoms. Heart rhythm and any dysrhythmias should also be noted as indicators of possible electrolyte imbalance or a concurrent heart condition.

Assessment of the signs and symptoms of alcohol withdrawal that indicate autonomic hyperactivity are best performed with a standardized assessment tool for scoring symptoms. The revised Clinical Institute Withdrawal Assessment (CIWA-Ar) (Sullivan et al., 1989) is the most researched and recommended tool for assessing alcohol withdrawal symptoms (Reoux & Miller, 2000; Saitz, 1998; Sullivan et al., 1989). Patients are often dehydrated and nauseas can contribute to poor oral intake.
Staff nurses need to assess for fluid balance deficit by providing frequent oral fluids or administering IV fluids as necessary (Lohr, 1995).

Many patients who abuse alcohol are also deficient in vitamins and electrolytes. Poor dietary habits may contribute to the deficiency, as well as changes in the digestive tract from the alcohol use. Nutrients pass through the digestive system more quickly due to the autonomic hyperactivity of the nervous system, and thus there is less time for nutrients to be absorbed (Myrick & Anton, 1998).

Folic acid and thiamine are two key vitamins to be administered to a patient in alcohol withdrawal. A deficiency in folic acid can prompt changes in blood cells, resulting in anemia. Thiamine deficiency can cause Wernicke syndrome (also called Wernicke-Korsakoff syndrome), which is a disorder of the nervous system characterized by confusion, gait abnormalities, and paralysis of certain eye muscles. Wernicke syndrome can lead to irreversible dementia (Myrick & Anton, 1998; Trevisan et al., 1998).

Because the patient in acute alcohol withdrawal is often sensitive to light and noise, a quiet environment with low-level lighting is preferable. Other interpersonal interventions include providing psychosocial support and limiting visitors due to the patient’s sensitivity to light, sound, and activity. The patient in acute alcohol withdrawal is often frightened by the symptoms. The nurse can offer reassurance that symptoms are being assessed and managed to keep the patient safe and comfortable. Nurses should provide positive encouragement and use a nonjudgmental approach to help the patient move through the crisis and to recovery (Myrick & Anton, 1998).

Clinical Management of Acute Alcohol Withdrawal

Pharmacologic treatment is most often used to treat moderate to severe alcohol withdrawal. Benzodiazepine medications are suitable agents for treating acute alcohol withdrawal (Lisanti, 2001; Mayo-Smith, 1997). Benzodiazepines are used to replace the alcohol depressant effects on the central nervous system. This replacement counteracts the autonomic hyperactivity exhibited with alcohol withdrawal. Additionally, because benzodiazepines and alcohol have similar effects on the brain, they are cross-tolerant. Cross-tolerance means that when a person experiences a deficiency of one agent, the other can serve as a substitute (Saltz, 1998). Benzodiazepines can be tapered safely and rapidly as alcohol withdrawal symptoms are minimized.

The choice of benzodiazepine depends upon available form of the medication (oral or IV) and half-life of the medication. The patient’s liver function must also be considered because the liver is the site of metabolism for benzodiazepines. Preferred benzodiazepines to treat alcohol withdrawal are chlordiazepoxide (Librium®), clonazepam (Klonopin®), and diazepam (Valium®) (Lisanti, 2001). Benzodiazepine selection is also based on patient clinical factors such as patient age and occurrence of prior seizures (Myrick & Anton, 1998). Long-acting benzodiazepines, such as diazepam and chlordiazepoxide, have a longer half-life and tend to provide a smoother course of treatment without the chance of rebound symptoms or a roller coaster effect. The patient with impaired liver function is at risk for oversedation when given long-acting benzodiazepines. Short-acting benzodiazepines such as lorazepam should be prescribed for the older adult patient or the individual diagnosed with severe liver dysfunction or severe lung disease. Benzodiazepines can be administered in two ways: the traditional fixed-dose schedule, or the symptom-triggered approach.

A patient experiencing acute alcohol withdrawal requires prompt treatment and intervention, because untreated or undertreated alcohol withdrawal can be fatal (Jarque-Lopez et al., 2001; Lohr, 2000; Schumacher, Pruitt, & Phillips, 2000). Symptom-triggered therapy has been proposed as a consistent standard to treat the variable symptoms and severity of acute AWS (Patch, Phelps, & Cowen, 1997; Reoux & Miller, 2000; Saitz, 1998). Scoring the symptoms of alcohol withdrawal triggers the administration of benzodiazepines in response to the severity of symptoms. This approach lends itself to a standard protocol which allows the registered nurse to assess and intervene as symptoms progress.

Symptom-Triggered Therapy

Symptom-triggered therapy consists of monitoring for signs and symptoms of alcohol withdrawal by scoring symptoms and administering medication only when symptoms are present at a clinically significant level. Using a protocol to regulate medication dosing decreases the risk that a patient may be either overmedicated or undermedicated for symptoms of alcohol withdrawal. The CIWA-Ar is currently recommended as a tool that can increase consistency in patient management (Reoux & Miller, 2000; Saitz, 1998; Sullivan et al., 1989).

Symptom-triggered therapy can be initiated on any patient with a reported history of consistent alcohol intake or a positive response to any of the CAGE questions. Focusing on key assessments for symptoms of alcohol withdrawal may alert the staff ear-
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The staff nurse can improve patient outcomes and decrease the risk of fatal consequences to the patient experiencing alcohol withdrawal by using a consistent approach to assess and medicate the patient for withdrawal symptoms. Without a standard assessment of risk for alcohol dependence, the nurse may overlook the role of alcohol deprivation and the patient’s symptoms of withdrawal. Lack of understanding about the patient with an addictive disorder may lead to lack of objective judgment toward the patient and the patient’s symptoms. Inaccurate assessment of signs and symptoms may lead to inadequate monitoring and medication, contributing to increased risk for severe complications of alcohol withdrawal treatment. Lastly, without a supportive discharge plan and referral for alcohol abuse, a patient continues without the benefit of treatment resources.

Proficient nursing skill is required for assessing a patient in acute alcohol withdrawal and titrating of benzodiazepines based on patient symptoms. Staff nurses often have a lack of specialized knowledge and education on addictions and AWS (Happell & Taylor, 1999; Ryan & Ottlinger, 1999). Table 1 provides an overview of the content in a 2-hour staff education program about AWS. The process for teaching this content to over 3,000 staff nurses is described in the following sections. All staff registered nurses attended the educational session prior to implementing the protocol on their clinical units. The program included information on disease recovery education, symptoms, discharge planning, and referral. Staff completed a symptom-triggered therapy-scoring competency at the end of the education session. Classes were offered at the hospital between 7:00 am and 11:00 pm. Classes began in 1997, and content was...
incorporated into new nurse orientation in 1999. Update classes continue to be offered as needed by the department of nursing staff development division.

Disease Education

Many nurses have personal experiences with family or friends who suffer from alcohol-use problems. These experiences may color their perceptions of the illness. To provide a more balanced view of the disease of alcohol abuse and withdrawal, the DSM IV definition of alcohol dependence was provided. This description was followed with a group discussion of the factors that contribute to the development of the disease (biology, psychosocial factors, and environment). An emphasis was placed on the chronic, progressive, relapsing nature of the disease. Assessment criteria and process were also described. The use of the CAGE questionnaire was reviewed, and a demonstration on how to assess for quantity and frequency patterns of alcohol intake (Kirton, 2001).

Withdrawal Management Education and Symptom Scoring Competency

This section of the class provided basic understanding of the withdrawal process, including the 10 signs and symptoms of alcohol withdrawal according to the CIWA-Ar. The medication management protocol was reviewed. An emphasis was placed on identifying how using a symptom-triggered approach to manage withdrawal symptoms could prevent the patient from becoming undermedicated or overmedicated. The concept of keeping the patient in the safety zone was introduced to the staff. The safety zone is identified as a stabilization of the autonomic nervous system by keeping the patient’s symptoms within the
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The concept of no autonomic hyperactivity and no respiratory depression (CL Productions, 1993; Lohr, 2000).

The medication schedule and the standardized protocol were reviewed, including the roles of the nurse and the physician. To assure staff nurse competency in scoring the 10 signs and symptoms of alcohol withdrawal on the CIWA order set, a video was developed to demonstrate how each level of score would look for each symptom. The video included a demonstration of a nurse assessing and scoring two different patients. This demonstration provides a clinical picture of two patients in alcohol withdrawal who have a different symptom intensity and therefore are scored and medicated differently. The viewer was asked to score with the nurse in the video; with corresponding rationale, the answers were then revealed at the end. A scenario was also provided on a posttest. Staff nurses identified a patient score based on described symptoms and determined the dose of benzodiazepine in accordance with a standard protocol applied to the scenario. This activity was the basic competency assessment of the staff nurses’ ability to evaluate a patient experiencing acute alcohol withdrawal and follow the established protocol.

Discharge Planning and Referral Education

The final portion of the education reviewed how to initiate a consultation request to the addiction team at any time during the patient’s stay. Discussion followed on how to collaborate with physicians in establishing the need for this consult. Because nurses are often frustrated that the affected patient appears to be “noncompliant,” stages of change were introduced and the class discussed the concept that resistant treatment adherence is developed through a gradual process of acceptance (Prochaska, Diclemente, & Norcross, 1992). Changing from the active stage of an individual’s disease to the remission stage takes time and is accomplished through supportive nursing interventions. For example, nurses learned that if someone was in the precontemplation stage of change (in which he doesn’t recognize he has a problem), an action stage intervention (for example, attending Alcoholics Anonymous meetings, stopping drinking) should not be prescribed. Information gave the nurses a better understanding of the process that needs to occur before a change in behavior will happen.

A physician from the medical facility conducted a retrospective analysis to assess the efficacy of symptom-triggered therapy before and after education of staff nurses and implementation of the CIWA-Ar. It was concluded that symptom-triggered therapy was effective treatment for hospitalized medical patients experiencing alcohol withdrawal syndrome. The study found there was not a significant decrease in length of stay but use of the CIWA-Ar was associated with a decreased incidence of delirium tremens. Delirium tremens has been identified as the most severe and life-threatening of all complications related to alcohol withdrawal syndrome (Jaeger et al., 2001).

Conclusion

Medical-surgical staff nurses frequently encounter patients with complex medical diagnoses and complicating factors, such as unrecognized alcohol withdrawal. If the nurse at the bedside is provided with specialized education on managing acute alcohol withdrawal and standardized tools to monitor symptoms, this potentially fatal syndrome can be managed effectively on general medical-surgical units in the acute care setting. Providing the patient with education and referral information for treating the alcohol dependency and disease process helps move the patient to the next level on the health care continuum. ■

References


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