



Assessment and Identification Management of Alcohol Withdrawal Syndrome (AWS) in the Acute Care Setting

Background

Alcoholism is a chronic, neurobiological disorder that leads to a variety of healthcare problems often leading to acute care hospitalization. It is not surprising that alcohol withdrawal syndrome (AWS), is a common occurrence in acute care patients. AWS is a potentially life threatening condition, often coupled with co-morbidities that can adversely affect the outcome of treatment. The focus of this position paper is to address the acute care patient who is at risk for or has developed AWS. Therefore, the recommendations are directed to the patient with alcohol withdrawal. However, many acute care patients are suffering from polysubstance abuse and a strong denial system (patient and family) which often produces either a complex or unexpected withdrawal syndrome presentation. Those patients require immediate referral to addiction or psychiatric nurse/physician specialists in the medical center due to the complex nature of their addiction and possible withdrawal state. The goals of this ISPN position statement are to: promote nursing and medical care that is evidence-based, promote an environment that addresses early identification and aggressive treatment of AWS that is effective and safe, and decrease the use of automatic chemical or mechanical restraints in the treatment of patients with AWS.

Impact of Substance Abuse on Global and National Health

Alcoholism and alcohol abuse produce significant threats to health worldwide. It has been ranked as the fourth leading cause of disability and healthcare burden in a global report (Murray & Lopez, 1996). In the United States, alcoholism has a high lifetime prevalence rate of ten percent. (NIDA & NIAAA, 1998). At least 15.4 million adults have alcohol-related problems (Miller, Gold, & Smith, 1997). Alcohol-related costs adversely impact on the United States healthcare system and society at large. This healthcare problem impacts on patients and affects many individuals while creating enormous social, physical, and psychological problems. The Ninth Special Report to Congress indicates increasing costs, estimated at \$166.5 billion per year in direct and indirect healthcare and social costs (Ninth Report, 1997).

Alcohol has been identified as a factor in fifty percent of all motor vehicle crashes, burns, interpersonal violence including homicides and increased crime (Rivara et al., 1993; NIAAA 1998; Ninth Special Report, 1997). More years are lost to alcohol-related causes than to heart disease; a rate that is second only to cancer (Miller, Gold, & Smith, 1997). Alcohol abuse is a serious problem for elderly adults affecting as many as 17% (Blow, 1998; Caracci & Miller, 1991). Until recently, problem drinking in the elderly has been ignored and minimized by both healthcare professionals and the general public. The treatment of persons with coexisting mental and substance abuse disorders is a subject of growing importance, which may involve 40 to 50% of the persons with a psychiatric diagnosis (Miller, Gold, & Smith, 1997).

Healthcare providers encounter patients with alcohol related problems in all healthcare settings; however, the patients' alcohol abuse is often not recognized, diagnosed or treated. Society's ambivalent views about alcohol and other drug use may be reflected in the attitudes of many healthcare providers, including nurses, who fail to accurately identify substance abuse problems, or harshly judge those patients (CASA, 2000). **Nurses are in key positions to identify alcohol problems in patients and to facilitate their access to appropriate and effective treatment.** When substance abuse testing and assessment, especially alcohol related, become routine, acute care settings can expect: improved patient management and follow-up, increased patient and family satisfaction and improved nursing morale. (Rostenberg, 1995).

Symptoms of Acute Alcohol Withdrawal Syndrome

Alcohol withdrawal in the acute care patient is complex, underdiagnosed, and often under or mistreated by utilizing monopharmacotherapy. Alcohol withdrawal can begin from 6 to 24 hours following cessation of drinking or if a significant reduction in the usual alcohol consumption occurs (Giannis, 2000; Myrick & Anton, 2000). Alcohol withdrawal delirium is typically experienced by the third day, and up to the fifth day of abstinence. DePetrillo and McDonough (1999a) identify three symptom clusters that differ physiologically, and the preferred treatment agents for each cluster. The three clusters provide a model for pharmacologic intervention based on symptom presentation. Refer to Appendix 1 Summary of Signs and Symptoms by AWS Type.

Most patients develop sensory hypersensitivity. Alcohol-related seizures are often associated with head trauma(s), history of seizures, and electrolyte instability (untreated hypomagnesaemia, hypokalemia, hyponatremia, and hypoglycemia. Electrolyte instability can produce a medical/psychiatric emergency. Symptoms are generally more severe and complex with women, older age, poor general health, poor nutritional status, amounts of alcohol consumed regularly, and a long duration of alcohol dependency (DePetrillo et al., 1999b; Sache, 2000). It is essential and medically appropriate to screen, assess, and identify patients with alcohol-related problems so that the necessary and appropriate medical and nursing care is instituted in a timely manner. Refer to Appendix 1 Summary of Signs and Symptoms by AWS Type.

Pharmacologic Management of AWS

ISPN believes that the major goal of pharmacologic treatment for AWS is to decrease mortality and morbidity, since AWS can be life threatening. It is acknowledged that alcohol withdrawal severity varies significantly, and the medications and amounts needed to effectively manage symptoms also vary significantly from patient to patient and among patient-related episodes of AWS. Refer to Appendix 1 Summary of Signs and Symptoms by AWS Type for symptom focused pharmacologic interventions.

Management of Medical and Psychiatric Illness

Chronic alcohol consumption is associated with a number of medical complications that must be addressed during the acute care stay. Also, chronic alcohol consumption may exacerbate pre-existing psychiatric-mental health illnesses. The behavioral, depletion of neurotransmitters and social problems associated with chronic alcohol consumption may lead to the secondary development of a psychiatric illness, such as anxiety and/or depression and an increased rate of suicide. Alcohol related complications are described in Appendix 2: Medical Conditions Related to Alcohol Abuse.

Recommendations

The quality and efficacy and outcomes of acute care services and treatment are inhibited and compromised if patients' alcohol patterns and histories are not known to the healthcare team planning and providing acute care services.

Therefore ISPN recommends that the following measures be instituted:

- All healthcare providers should become knowledgeable about AWS symptom identification, utilization of routine screening methods, AWS assessment/quantification tools, specific pharmacologic intervention, and identification and utilization of acute care resources to facilitate successful referral to the appropriate level of addiction treatment.
- All healthcare providers should conduct routine screening for substance use in their practice and identify patients at risk for abuse and dependency.
- All nurses function as advocates to insure their patients receive appropriate screening and expedient treatment for AWS in conjunction with appropriate referrals to maintain the patients functional and cognitive status.

Screening for Alcohol Abuse or Dependence

- All patients should be screened by their healthcare providers at the point of entry into the healthcare system. They should be asked about alcohol use, and the presence of any alcohol-related problems.
- All acute care patients should be screened using reliable and easy to use screening tool that can be implemented in any acute and emergency care environment. The CAGE questionnaire, with its four questions, is an example of such a tool (Ewing, 1984; Beresford, 1990)), refer to Appendix 3 for information on the CAGE questionnaire.
- All acute care patients who are at high risk, (particularly trauma patients), or any patient who scores two positive answers on the CAGE screening tool should have blood alcohol concentration (BAC) determinations as well as urine toxicology screens performed on admission.
- Assessment and Quantification of Alcohol Withdrawal Syndrome (AWS)
- All acute care patients with either a positive CAGE or BAC should be assessed for the possibility of developing Alcohol Withdrawal Syndrome (AWS).
- Assessment should be done using an evidence-based clinically focused assessment tool such as the AWS Type Indicator (DePetrillo & McDonough, 1999).
- All patients with any of the following: positive blood alcohol concentrations (BAC), positive urine toxicology screens, and positive CAGE scores- receive further assessment for proper diagnosis and prompt intervention for substance abuse/dependency. Consultation and referral to psychiatric consultation liaison nurse, addiction consultation nurse or other experts available within healthcare system for evaluation will aid in diagnosis of coexisting (co morbid) psychiatric disorders.

Pharmacologic Management of AWS

- The determination of medication and dosage administered is based on the identification and quantification of AWS symptomatology demonstrated on the AWS Type Indicator or other objective quantification tool.

- Specific treatment is instituted immediately following patient assessment with an objective quantification tool. Particular attention should be focused on managing signs and symptoms related to increasing circulating levels of epinephrine, since the conditions related to hyperadrenergic state are most commonly associated with AWS mortality and morbidity.
- Treatment of patients with AWS should be based on individualized and dynamic psychopharmacologic interventions, so patients receive the appropriate medications in the correct dosages and combinations to effectively treat their AWS symptomatology.
- Individualized and dynamic treatment requires that each symptom cluster is assessed and quantified, and then treatment is instituted with the appropriate medication for each symptom cluster where there are symptoms present.
- ISPN does not support fixed dosing medication regimens: a fixed, standardized dose for all patients cannot effectively or adequately treat AWS. (Mayo-Smith, 1997).
- ISPN does not support PRN dosing without any mean of quantifying symptoms; it is an equally inadequate method of detoxification (Mayo-Smith, 1997).
- ISPN does not recommend or support the use of ethyl alcohol (oral or intravenous) in the treatment of AWS because of the lack of controlled studies regarding its effectiveness (evidence is only anecdotal reports and case studies). Additionally, there is well-documented evidence of adverse effects of ethyl alcohol as a pharmacologic agent (Mayo-Smith, 1997).
- ISPN does not recommend the use of automatic restraints (chemical or mechanical) for agitated behavior due to AWS without first attempting environmental manipulation, calming techniques and pharmacotherapy. (ISPN Position Statement, 2000)

Management of Medical and Psychiatric Illness

- Alcohol associated medical and psychiatric problems must be identified, and treated appropriately and concurrently.
- The patient must be taught to understand the link between chronic alcohol consumption and the medical illnesses or complications present including effects on psychosocial functioning (job loss, DUI, interpersonal violence-especially domestic violence, impact on children- one in four children are raised in families where alcoholism or alcohol abuse is present).
- The patient must be advised to seek treatment for alcohol dependence as a necessary strategy in the treatment of any medical illnesses or complications present that can be linked to alcohol consumption.
- Healthcare providers, especially nurses in acute care settings, should request consultation with psychiatric/addiction colleagues to determine the presence of any coexisting psychiatric illness and the appropriate treatment. (The identification of psychiatric symptomatology may not be clearly established if the patient develops alcohol withdrawal delirium, but can be detected after the delirium has resolved or through collateral interviews).
- Healthcare providers need to consider additional consultations to enhance the patient's general well being, functional status and cognitive functioning in conjunction with AWS treatment. Examples of

additional consultations are nutritional, physical therapy and occupational therapy. It is important to identify any deficits that may interfere with further addiction treatment

Referral for Addiction Focused Treatment

- All acute care patients who have been treated for AWS need a focused addiction and readiness to change assessment (Prochaska et al., 1992) to assist patients, family and treatment providers in determining the level and focus of addiction and possible psychiatric treatment. Acute care alcohol detoxification only is incomplete and ineffective treatment for alcohol dependence.
- Recovery focused treatment should also be individualized and may include community based mutual help groups, low intensity outpatient treatment programs, high intensity outpatient treatment programs, family or relationship therapy, individual therapy with a cognitive/behavioral focus, and/or residential treatment.
- All patients should be offered and receive an individualized referral for addiction treatment and all options available to the patient should be discussed completely with the patient prior to their acute care discharge.
- Family members (including children), or significant others should be provided with community based referrals to address the impact of alcoholism on them.

Summary

The early identification and clinically focused assessment of AWS in conjunction with individualized and dynamic treatment results in increased patient comfort, decreased cost, decreased adverse consequences related to the detoxification process, decreased percentage of patients leaving against medical advice (AMA) and decreased the restraint incidences and length of time spent in restraints. Patient, family and nursing satisfaction and with safety are all positively impacted with this approach to a potentially life threatening syndrome.

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Appendix 1: Summary of Signs and Symptoms By The AWS Type

AWS TYPE	TYPE A (CNS Excitation)	TYPE B (Adrenergic Hyperactivity)	TYPE C (AWS Delirium)
Physiologic Basis for Symptom Manifestation	Deficiency in GABA activity, with effect on serotonin, norepinephrine and dopamine along with an overactivity of certain subtypes of NMDA receptors.	Increase in CNS epinephrine and an increase in circulating levels of epinephrine	Postulated that the glutamate-related NMDA receptor hypersensitivity plays a role in AWS delirium
Signs and Symptoms	Uneasiness, sense of foreboding, apprehension, motor hyperactivity, enhanced sensitivity and reaction to abrupt sensory stimuli, mood lability, dysphoria, anxiety, insomnia	Chills, diaphoresis, fever, hypermetabolic state, hypertension, muscle tremors, mydriasis, nausea and vomiting, palpitations, piloerection, tachycardia	Attentional deficit, disorientation, hyper-alertness, impairment of short-term memory, impaired reasoning, psychomotor agitation, visual and auditory, tactile hallucinations
Recommended Pharmacotherapy (listed based on level of effectiveness- highly effective to some effect)	Benzodiazepines (lorazepam-Ativan, diazepam-Valium, chlordiazepoxide-Librium) Carbamazepine (Tegretol) Valproic Acid (Depakote) Clonidine (Catapres)	Clonidine (Catapres) Beta Blockers (propranolol-Inderal, atenolol-Tenormin, labetalol, Normodyne) Valproic Acid (Depakote) Carbamazepine (Tegretol) Benzodiazepines	Neuroleptics (haloperidol-Haldol, risperidone-Risperdal, fluphenazine, Stelazine, droperidol-Inapsine)

Adapted and used with permission from DePetrillo, P. & McDonough, M. (1999). Alcohol Withdrawal Treatment Manual. Glen Echo, MD: Focused Treatment Systems.

Resource: For additional information and discussions with an addictionologist studying AWS use <http://www.sagetalk.com>

Appendix 2: Medical Conditions Related to Alcohol Abuse

Cardiovascular

- alcoholic cardiomyopathy
- increased systolic and pulse pressure
- tissue damage, weakened heart muscle, and heart failure

Gastrointestinal

- abdominal distention, pain, belching, and hematemesis
- acute and chronic pancreatitis
- alcoholic hepatitis leading to cirrhosis
- cancer of the esophagus, liver, or pancreas
- esophageal varicies, hemorrhoids, and ascites
- gastritis, colitis, and enteritis
- gastric or duodenal ulcers
- gastrointestinal malabsorption
- hepatorenal syndrome
- swollen, enlarged fatty liver

Genitourinary

- hypogonadism, hypoandrogenization, hyperestrogenization in men
- increased urinary excretion of potassium and magnesium (results in hypomagnesemia, hypokalemia)
- infertility, decreased menstruation
- prostate gland enlargement, leading to prostatitis and interference with urination
- prostate cancer
- sexual dysfunction: decreased libido, sexual performance decreased, impotency

Metabolic

- hypoglycemia, hyperlipidemia, hyperuricemia
- ketoacidosis
- osteoporosis

Hematologic

- abnormal red blood cells, white blood cells, and platelets
- anemia and increased risk of infection
- bleeding tendencies, increased bruising, and decreased clotting time
- mineral and vitamin deficiencies (folate, iron, phosphate, thiamine)

Neurologic

- Wernicke-Korsakoff syndrome, Marchiafava-Bignami disease, cerebellar degeneration
- peripheral neuropathy, polyneuropathy
- seizures
- sleep disturbances
- stroke (increased risk of hemorrhagic stroke)

Respiratory

- cancer of the oropharynx
- impaired diffusion, chronic obstructive pulmonary disease, infection, and tuberculosis
- respiratory depression causing decreased respiratory rate and cough reflex and increased susceptibility to infection and trauma

Trauma related

- burns, smoke inhalation injuries
- injuries from motor vehicle crashes and falls

Appendix 3: Cage Questionnaire

The CAGE is a very brief questionnaire for detection of alcoholism. Item responses on the CAGE are score 0 for NO and 1 for YES, with a higher score an indication of alcohol problems. A total score of 2 or more is considered clinically significant and requires a more focused and detailed assessment. The following are the four questions that comprise the CAGE questionnaire.

- | | | |
|---|-----|----|
| 1. Have you ever felt you should cut down on your drinking? | YES | NO |
| 2. Have people annoyed you by criticizing your drinking? | YES | NO |
| 3. Have you ever felt bad or guilty about your drinking? | YES | NO |
| 4. Have you ever had a drink first thing in the morning to steady your nerves to get rid of a hangover? (Eyeopener) | YES | NO |

Source: Ewing, J.A. (1984). Detecting Alcoholism. Journal of the American Medical Association. 252, 1905-1907.

Additional Readings:

Burge, S. & Schneider, F. (1999). Alcohol-related problems: Recognition and Intervention. American Family Physician. American Academy of Family Physicians Home Page (www.aafp.org, 1/15/99).

Davis, M. (2000). Alcohol and Drug Addiction. Medical Library (www.medical-library.org, 9/30/00).

Wesson, D. (1995). Detoxification from Alcohol and Other Drugs. Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment, Treatment Improvement Protocol # 19.

Additional Resources:

National Clearinghouse for Alcohol and Drug Information, P.O. Box 2345, Rockville, MD 20847-2345, 1-800-729-6686

National Council on Alcoholism and Drug Dependence, Inc., 12 West 21st Street, New York, NY 10010, 1-800-NCA-CALL