ALCOHOL ABUSE

T. E. Pitts, DPM

Alcohol abuse is one of the largest health problems in the United States today. There are currently over 15 million chronic users of ethanol. Patients who abuse alcohol and other drugs are often demanding and hostile towards the medical staff when hospitalized. The major deterrent to the effective peri-operative management of alcohol abusers is a negative attitude by the physician towards the patient. The physician must be compassionate with alcoholics and learn to treat the psychological as well as the physical disorders associated with this illness.

DIAGNOSIS

Because of the social stigma attached to alcohol abuse, the diagnosis of this illness is imprecise. A simple diagnostic criterion for alcoholism is the following: Alcoholism is any degree (mild, moderate or severe) of alcohol use which results in physical, emotional, interpersonal, or vocational dysfunction, or where alcohol is used to any degree in order to maintain or improve function.[1] In order to determine if a patient is an ethanol abuser, the podiatrist as well as the primary physician, must take a careful history of the patient's drinking habits. The type of alcohol as well as the volume, frequency, duration and circumstances in which the beverage is consumed, should be included. The podiatrist should perform a brief physical exam on all patients prior to surgery since he or she is ultimately responsible for the patient's care. This examination should include an evaluation of the patient's heart, lungs, and abdomen at minimum. Physical signs which may appear in your examination of an alcoholic patient include hepatomegaly, jaundice, palmer erythema, and spider nevi.[2]

SURGICAL RISK

Patients who abuse alcohol are at an increased risk of developing complications during the peri-operative period. Chronic alcohol consumption results in deleterious effects on many of the body systems including the gastrointestinal, genitourinary, pulmonary, cardiovascular, and neuromuscular systems.

The selection of anesthesia is extremely important in alcoholic patients with associated hepatic dysfunction since many of the anesthetic drugs reduce liver blood flow which can increase liver damage. General anesthesia should be avoided in patients with liver dysfunction whenever possible.

Many medications used during the postoperative period must also be used with caution since a majority of these drugs are metabolized and excreted by the liver. One should avoid the use of nonsteroidal anti-inflammatory agents (NSAIDs) since these drugs may aggravate or precipitate gastrointestinal disorders. The medical staff should be aware that an alcohol abuser may attempt ethanol consumption while hospitalized or directly after discharge. Therefore, the physician must be cautious with the use of narcotic analgesics, anti-histamines, sedatives, or hypnotics, since the depressant effect of these drugs may be potentiated by alcohol.

Alcohol also occasionally causes rare disulfiram-like reactions to occur in combination with certain antibiotics: nitrofurans, chloramphenicol, and sulfonamides. Since chronic consumption of alcohol may cause increased risk of postoperative infection due to changes in the immune system, the physician may consider the use of prophylactic antibiotics.

METABOLIC/LAB ABNORMALITIES

Once a specific diagnosis of alcohol abuse is made, major problems to consider in the pre-op evaluation of the patient include a variety of metabolic disorders. Alcoholic ketoacidoses may be seen if the patient is starved or dehydrated prior to surgery. A recent history of protracted vomiting and abdominal pain is common prior to the onset of this disorder. Unlike diabetic ketoacidoses, the blood sugar is usually normal or decreased. This syndrome usually reverses with refeeding and rehydration.

Wernicke's and Korsakoff's syndromes are mental disorders seen in alcoholic patients caused by a deficiency in Vitamin B1 (thiamine). Other vitamins which may be deficient in alcoholics include folic acid, niacin (B3), Vitamin A, and pyridoxine (B6).[3] Low levels of potassium, magnesium, phosphorus, calcium, and zinc may occur as a result of malnutrition and acid base imbalances during chronic alcohol consumption.

A prolonged prothrombin time (PT) may be found in the alcoholic with liver disease since many of the clotting factors are synthesized in the liver. Parental Vitamin K should be given to reduce the risk of hemorrhage during surgery in alcoholic patients with a prolonged PT and with whom excessive hemorrhage is anticipated. In general, the more severe the liver disease, the more likely the patient will hemorrhage and the less likely the patient will respond to parental Vitamin K treatment. If the PT does not return to normal after administration of Vitamin K, then fresh frozen plasma may be used to reduce the risk of excessive intra-operative hemorrhage.

Alcoholic liver disease causes elevations of the liver enzymes aspartate amenotrasferase or AST (formerly known as SGOT) and alanine aminotransferase or ALT (formerly known as SGPT). However, the degree of enzyme elevation correlates poorly with the severity of liver disease.[4] In alcoholic liver disease, the AST level frequently exceeds that of ALT, and the AST/ALT ratio is often greater than 2:1. Approximately 1 - 2 weeks of abstinence from ethanol is usually sufficient to cause a significant decrease in AST.

Another commonly elevated lab value among alcohol abusers is the MCV (mean corpuscular volume) found in the CBC test. The increase in RBC size or MCV may be associated with a mild anemia. Chronic ethanol consumption can also decrease the production of white blood cells (WBC) as well as red blood cells (RBC's). A WBC of 2,000 - 4,000 is not uncommon in alcoholic patients which may contribute to an increased risk of infection. Thrombocytopenia platelet count is also common in patients with alcoholic liver disease due to a decrease in platelet survival and altered function. Platelet counts below 100,000 are not uncommon. Thrombocytopenia is unusual in non-alcoholic liver disease unless hypersplenism is present.

WITHDRAWAL

Withdrawal symptoms may be precipitated by any sudden decrease in ethanol, therefore, total abstinence from alcohol is not required. Patients suffering from alcohol withdrawal may present with one of several of the following symptoms: tremors, anxiety, nausea, hallucinations, insomnia, seizures, and autonomic nervous system dysfunction including tachycardia, fever, hypertension, and hyperventilation. These symptoms usually begin within 5 - 10 hours after the patient's last drink. The peak in intensity of withdrawal symptoms occurs by day 2 or 3 and improves by day 4 or 5, however mild autonomic hyperactivity may persist for 6 months. Delirium tremors or DT's usually begin 3 - 5 days after a decline in alcohol consumption but may begin 10 - 14 days after abstinence. Characteristics of delirium include confusion, with associated delusions and hallucinations, severe agitation, and generalized seizures. 5 - 10% of all patients suffering alcohol withdrawal will present with DT's, and mortality rates range from 5 - 20%.

Sedation and nutrition are important components of alcohol withdrawal therapy. All patients should be given multiple B vitamins including 50 - 100 mg of thiamine (B1) daily for 1 - 2 weeks. Rehydration should begin in patients who are dehydrated. The choice of IV vs PO fluids will depend upon clinical and laboratory presentations. Most medications can usually be administered orally in an uncomplicated withdrawal episode.

Benzodiazepine is the drug of choice in the treatment of alcohol withdrawal. Most physicians administer diazepam (Valium) or chlordiazepoxide (Librium) since these drugs have longer half-

lives. The average patient requires 10 mg. of diazepam or 25 - 50 mg of chlordiazepoxide orally every 4 - 6 hours on the first day. The drug is then slowly tapered over the next 3 - 5 days. Generalized seizures usually do not require additional anti-convulsant medications such as phenytoin since the risk of recurrent seizures has usually passed by the time effective drug levels are reached. Anti-psychotic medications such as thioridazine (mellaril) are not used in the treatment of alcohol withdrawal symptoms.

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