



include fatty infiltration, hepatitis, fibrosis, and end-stage cirrhosis.

CLINICAL PRESENTATION

Acute Alcohol Intoxication

Mild ethanol intoxication produces slurred speech, ataxia, irregular eye movements, and poor coordination. Signs of CNS depression and associated cerebellar or vestibular dysfunction include dysarthria, ataxia, and nystagmus. Although blood alcohol concentrations are not precisely correlated with the degree of intoxication and the clinical effect of ethanol widely varies among individuals, stupor and coma usually develop at blood concentrations approaching 400 mg/dL. Blood levels of 500 mg/dL often are fatal; however, it is important to understand that death may occur even when the blood alcohol concentration is as low as 300 mg/dL.

Withdrawal Syndrome (Convulsions)

Alcohol withdrawal occurs in three stages. The signs of minor withdrawal usually appear 6 to 12 hours after the discontinuation of ethanol and are caused by central adrenergic hyperexcitability; they consist of anxiety, tremors, sweating, tachycardia, diarrhea, and insomnia. Additional evidence of autonomic nervous system hyperactivity often appears within 12 to 24 hours and includes increased startle response, nightmares, and visual hallucinations. Alcohol withdrawal seizures (so-called *rum fits*) are generalized clonic-tonic convulsions that occur 12 to 48 hours after the discontinuation of ethanol and are estimated to occur in 2% to 5% of alcoholics.

Delirium Tremens

Delirium tremens (DTs) is characterized by delirium (a confused state with varying levels of consciousness), hallucinations, disorientation, agitation, tremor (caused by marked autonomic nervous system over activity), tachycardia, hypertension, fever, and diaphoresis. It occurs in approximately 5% of alcoholics, most often in chronic heavy abusers with underlying neurologic damage. If unrecognized and untreated, the in-hospital mortality rate of DTs approaches 25%; with early recognition and treatment the mortality is only 5%.

TREATMENT

Intervention strategies in alcohol abusers are designed to modify the individual's attitudes, knowledge, and skills to prevent alcohol misuse. In the outpatient setting, increased frequency of contact between the primary care physician and the patient increases the likelihood of detection, intervention, and prevention of heavy alcohol consumption. All scheduled office visits should include alcohol screening, assessment, and brief attempts at intervention (one or more discussions lasting 10 to 15 minutes), if indicated, as studies show that this approach decreases alcohol intake and its consequences. Behavioral or pharmacologic treatment should be considered because two thirds of treated patients have a reduction in the amount of consumption (by more than 50%) as well as the consequences of consumption (e.g., alcohol-related injury or job loss). A year after treatment, one third of patients are either abstinent or drink moderately without consequences.

Screening and Intervention Strategies

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) provides several web-based guidelines for alcohol screening during the routine health examination (www.niaaa.nih.gov). A four-step plan exists with which physicians can (1) screen patients for alcohol use, (2) assess for the presence of alcohol-related problems, (3) provide advice concerning appropriate action, and (4) monitor the patient's progress. For the current drinker, the physician should inquire about the number of drinks consumed per day, number of days per week on which ethanol is consumed, and total number of drinks consumed per month. Alcohol consumption that exceeds 14 drinks per week or three drinks per day should trigger an in-depth assessment of alcohol-related problems. The physician should ascertain if the individual is at risk for alcohol-related problems, has an existing problem, or may be alcohol-dependent. Difficulties with work-related, interpersonal, or family relationships and/or evidence of high-risk behavior despite self-reported low-risk consumption indicate that the individual is at risk for alcohol use disorder.

The CAGE questionnaire (each of the letters in the acronym refers to one of the questions) (Table 126-3) is a useful screening tool for identifying alcohol-dependent individuals. A positive response to two or more of the four questions is indicative of a potential alcohol problem and should prompt questions regarding the quantity and frequency of consumption. The Alcohol Use Disorders Identification Test (AUDIT) (Table 126-4) is the most widely validated instrument for use in primary care settings. Utilizing 10 items and taking two to three minutes to complete, it is better suited to settings where visit times are longer or when it can be completed and scored before a clinician visit. On physical examination, evidence of alcoholic liver disease may be exhibited as jaundice, hepatomegaly, palmar erythema, male gynecomastia, spider angiomas, and ascites. The serum γ -glutamyltransferase concentration typically is elevated in individuals who drink excessively.

Low-Risk Drinking

A standard drink contains 12 g of alcohol, an amount similar to that found in one 12-oz bottle of beer or wine cooler, one 5-oz glass of wine, or 1.5 oz. of distilled (e.g., 80 proof) spirits. In men older than age 64 years and in women older than 21 years, the limit for moderate drinking is one drink per day. For younger men, moderate drinking is defined as no more than two drinks per day. For the same amount of ingested ethanol, women and older adult men achieve a higher blood concentration of ethanol than younger men owing to their smaller volume of body water. A reasonable blood alcohol level should not exceed 50 mg/dL.

A blood-alcohol level as low as 80 mg/dL may exceed the legal definition for driving under the influence (DUI) or driving while

TABLE 126-3 CAGE: AN ALCOHOLISM SCREENING TEST

1. Have you ever felt you should *cut down* on your drinking?
2. Have people *annoyed* you by criticizing your drinking?
3. Have you felt *guilty* about your drinking?
4. Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover (i.e., as an *eye-opener*)?