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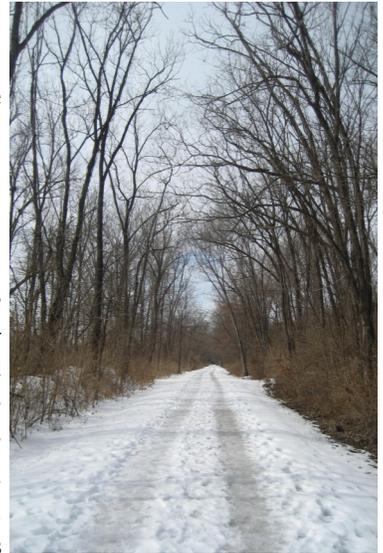
Alcohol Dependence: The role of primary care providers and hospitalists

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Alcohol abuse continues to be one of the most serious public health hazards throughout the world. The economic burden of alcohol-related issues is substantial and represents a significant portion of the U.S. healthcare budget. As reported in the National Survey of Drug Use and Health report in 2009, 7.8 percent of persons aged 12 or over (an estimated 19.3 million individuals) required treatment for alcohol-related problems in the previous year. As per the report, of those persons who needed treatment, only 8.1% received therapy at a facility that specializes in substance abuse; 4.5% felt they needed treatment but did not receive it while 87.4% neither received therapy nor perceived that it was needed. The most common reasons for failing to receive therapy in those who felt they needed it were the conviction that they were not ready to stop using alcohol (42%) and cost barriers (34.5%) [1]. In 2007, the American Public Health Association reported that, for the year 2004, alcohol-related health expenditures totaled \$216.2 million, representing 3% of all healthcare costs for that year [2]. Violence and alcohol use are major risk factors for the three leading causes of death among individuals age 12-20 years: suicide, homicide and unintentional injuries. [3]

In DSM-IV, alcohol dependence is defined as repeated alcohol-related difficulties in at least 3 of 7 areas of functioning that cluster together over a 12 month period. Two of these seven items, tolerance and withdrawal, may have special importance as they are both associated with a more severe clinical course.

Alcohol ingestion affects the neurologic system via a variety of mechanisms. It inhibits excitatory glutamate receptors and facilitates inhibitory gamma-aminobutyric acid (GABA) receptors [1]. Initial symptoms of acute intoxication, including euphoria and disinhibition, progress to stupor and respiratory depression [2]. Continued use of alcohol leads to glutamate receptor up-regulation and GABA receptor down-regulation; as a result, abrupt abstinence after prolonged alcohol consumption can result in hallucinations (visual, auditory or tactile), tremors, seizures, delirium tremens and autonomic instability. Repeated binges and withdrawals can lead to permanent neuronal damage which, over time, can progress to dementia [3-5]. Other indirect CNS effects of excess



(continued) alcohol consumption are cerebral trauma, hypoglycemia, hepatic encephalopathy, alcoholic keto-acidosis and the concomitant use of other drugs such as cocaine and heroin [6-10]. Marchiafava-Bignami disease is an entity described mostly in alcoholics, manifest by mania, depression, paranoia, dementia, seizures, paresis and ataxia, progressing to coma and death within a few months; advancements in neurologic imaging (MRI) have led to an increased incidence of this condition, as reported in the medical literature [11]. A number of nutritional disorders, including thiamine, nicotinic acid and other B vitamin deficiencies and Wernicke-Korsakoff syndrome are commonly encountered in alcoholics [12].

Even though alcohol dependence improves with specialized treatment [13,14], most individuals fail to receive any therapy. Barriers to the treatment of alcoholism, as mentioned above, have led to an increased need for management of alcohol dependence in non-specialized addiction centers [15,16]. Although very few inpatients with alcohol dependence receive specialized treatment during their admission, many will be scheduled to see their primary physician post discharge, providing an opportunity to engage these patients in discussions about their drinking habits. Repeated outcome interventions by physicians have been shown to decrease alcohol intake in patients with alcohol dependence [17,18]. In the COMBINE trial of medications for alcohol dependence, published in 2006, placebo combined with frequent medical visits was comparable to specialized alcohol treatment when outcomes were assessed [19]; when access to specialty programs is limited, repeated discussions about a patient's alcohol use may thus be a good alternative. Four medications: naltrexone, acamprostate, topiramate and disulfiram have proven to be efficacious in the treatment of alcohol dependence [20]; of these topiramate has been approved by the FDA for this use in the U.S. Naltrexone has been shown to reduce relapses in heavy drinkers, especially during the first 3 weeks. [21] Acamprostate acts on the GABA and glutamate receptors and reduces the symptoms of protracted abstinence such as insomnia, anxiety, restlessness and dysphoria [22]. Disulfiram inhibits intermediate alcohol metabolism, leading to accumulation of acetaldehyde, which causes flushing, sweating, nausea and palpitations if alcohol is consumed [23].

Primary care physicians can play a very important role in decreasing the burden of alcohol dependence in the community by performing brief interventions during office visits, utilizing screening instruments such as AUDIT (The Alcohol Use Disorders and Identification Test). More large scale, randomized, controlled studies are needed for the assessment of effective pharmacological interventions. It is also important that the effectiveness and availability of alcoholism screening tools be reinforced in our training programs. While increasing the number of clinics that specialize in the management of alcohol dependence would be ideal, the current economic environment appears to preclude that solution even though, in the end, it might be more cost effective to do so. The role of hospitalists in the approach to this major health problem is not just limited to the treatment of acute alcohol intoxication, alcohol withdrawal and the medical complications of alcohol; it is also important that we direct patients toward community resources and ensure close follow up with their primary care physician post discharge. Of course, our options with homeless and uninsured patients are often very limited.

REFERENCES:

1. Davis, KM & JY Wu, Role of glutamatergic and GABAergic systems in alcoholism, *J Biomed Sci*, Jan-Feb 2001; 8(1): 7-19
2. Koch-Weser, J et al., Alcohol intoxication and withdrawal, *NEJM*, Apr 1, 1976; 294(14): 757-762
3. Foy, A et al., The course of alcohol withdrawal in a general hospital, *QJM*, Apr 1997; 90(4):253-261
4. Ng, SK et al., Alcohol consumption and withdrawal in new-onset seizures, *NEJM* 1988; 319(11):666-673
5. Kosten, TR & PG O'Connor, Management of drug and alcohol withdrawal, *NEJM* 2003; 348(18):1786-1795

6. Rivera, FP et al., The effects of alcohol abuse on readmission for trauma, *JAMA*, 1993; 270(16): 1962-1964
7. Cook, RT, Alcohol abuse, alcoholism and damage to the immune system-a review. *Alcohol Clin Exp Res*, December 1998; 22(9): 1927-1942
8. Malouf R. & JC Brust, Hypoglycemia: causes, neurologic manifestations and outcome, *Ann Neurol*, May 1985; 17(5):421-430
9. Lizardi-Cervera, J et al., Hepatic encephalopathy: a review. *Ann Hepatol* 2003; 2(3)122-130
10. Brust, JC, Neurologic aspects of substance abuse, 2004; 2nd Edit, Butterworth-Heinemann, 317-425
11. Kohler, CG et al., Marchiafava-Bignami disease: literature review and case report, *Neuropsychiatry Neuropsychol Behav Neurol*, 2000; 13(1): 67-76
12. Brust, JC, Ethanol and cognition: indirect effects, neurotoxicity and neuroprotection: a review, *Int J Environ Res Public Health*, 2010; 7(4): 1540-1557
13. Weisner, C et al., How important is treatment? One year outcomes of treated and untreated alcohol-dependent individuals, *Addiction* 2003; 98(7):901-911
14. Dawson, DA et al., Estimating the effect of help-seeking on achieving recovery from alcohol dependence, *Addiction* 2006; 101(6):824-834
15. McKay, JR, Is there a case for extended interventions for alcohol and drug use disorders? *Addiction*, 2005; 100(11):1594-1610
16. McClellan, AT, Reducing heavy drinking: a public health strategy and a treatment goal? *J Sust Abuse Treat* 2007; 33(1):81-83
17. Willenbring, ML and DH Olson, A randomized trial of integrated outpatient treatment for medically ill alcoholic men, *Arch Intern Med*, 1999; 159(16): 1946-1952
18. Brown, RL et al., Randomized-controlled trial of a telephone and mail intervention for alcohol use disorders: three month drinking outcomes, *Alcohol Clin Exp Res* 2007; 31(8):1372-1379
19. Anton,, RF et al., Combined pharmacotherapies and behavioral interventions for alcohol dependence: the COMBINE study, a randomized-controlled trial, *JAMA* 2006; 295(17):2003-2017
20. Helping patients who drink too much: A clinicians guide (updated 2005 guide), National Institute on Alcohol Abuse and Alcoholism, US Department of Health and Human Services, NIH 2007
21. Bouza, C et al., Efficacy and safety of naltrexone and acamprosate in the treatment of alcohol dependence: a systematic review. *Addiction* 2004; 99(7):811-828
22. Mann, K et al., The efficacy of acamprosate in the maintenance of abstinence in alcohol-dependent individuals: results of a meta-analysis. *Alcohol Clin Exp Res*, 2004; 28(1):51-63
23. Fuller, RK and E. Gordis, Does disulfiram have a role in alcoholism treatment today? *Addiction*, 2004; 99(1):21-24