Cochrane for Clinicians

Putting Evidence into Practice

Alcoholics Anonymous and Other 12-Step Facilitation Programs for Alcohol Use Disorder

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Clinical Question

Are Alcoholics Anonymous (AA) and similar 12-step facilitation programs as effective as other established treatments for helping people with alcohol problems achieve abstinence and/or reduce drinking intensity, alcohol-related consequences, and alcohol addiction severity?

Evidence-Based Answer

Manualized (standardized and replicable) AA and similar 12-step facilitation programs produce higher rates of continuous abstinence than other established treatments. (Strength of Recommendation [SOR]: A, based on consistent, good-quality patient-oriented evidence.) Nonmanualized (nonstandardized) 12-step programs perform as well as other established treatments investigated across a variety of alcohol-related outcomes. (SOR: B, based on inconsistent or limited-quality patient-oriented evidence.) Overall, 12-step programs may be superior to other treatments for increasing percentage of days of abstinence (SOR: B, based on inconsistent or limited-quality patient-oriented evidence.) and probably perform as well as other treatments at reducing drinking intensity.[1] (SOR: B, based on inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

Excessive alcohol use continues to be a major cause of preventable morbidity and mortality.[2] In the United States, it is the third leading preventable cause of death. Each year, 88,000 U.S. deaths are attributable to alcohol.[3] Excessive alcohol use poses a substantial economic burden, costing the United States $249 billion in 2010.[4] AA is a free, nonprofessional, peer-to-peer, community-based program focused on helping individuals with alcohol use disorder to achieve abstinence.[5] Founded in the United States in 1935, AA has millions of members and is available in nearly every community worldwide.[6] Twelve-step facilitated programs use the methodology and concepts of AA within the context of larger clinical/addiction treatment environments. Often, the goal of offering a 12-step program in an addiction treatment program is to engage people with alcohol use disorder, orient them to the principles and concepts of AA, and encourage their engagement in community-based AA programming posttreatment.[7]

The authors of this Cochrane review included 27 studies with 10,565 participants.[1] The study designs included randomized controlled trials (RCTs), quasi-RCTs, and nonrandomized studies that compared 12-step programs with usual treatment or other behavioral interventions, including motivational enhancement therapy, cognitive behavior therapy, or 12-step program variants. Twelve-step interventions were also stratified by manualized vs. nonmanualized programs; manualization in this context refers to the degree of standardization and replicability. None of the included studies examined the role of pharmacotherapy for alcohol use disorder as part of the treatment regimen. Fifteen studies used a manualized 12-step approach, and 11 used a partial/nonmanualized approach. Outcomes included abstinence, drinking intensity, alcohol-related consequences, and alcohol addiction severity. The average age of participants ranged from 34 to 51 years and the proportion of female participants ranged from 0% to 49%. Eleven of the 27 studies had a high risk of selection bias.

Compared with the other interventions studied, manualized 12-step programs improved rates of continuous abstinence at 12 months from the start of therapy (number needed to treat = 13.6; 95% CI, 6.8 to 90.9), and this effect remained at 24 and 36 months. Manualized 12-step programs did not have a statistically significant difference from other interventions for the following outcomes: percentage of days abstinent at 12 months, drinking intensity at 12 months (measured by drinks per drinking day and percentage of days of heavy drinking), and alcohol-related consequences at 12 months. Manualized 12-step programs were associated with an increase in the percentage of days abstinent at 24 months and 36 months based on very low-certainty evidence.

For nonmanualized 12-step programs, the quality of the evidence was lower compared with manualized programs and studies were of shorter duration (nine months or less).

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The analysis suggested that nonmanualized 12-step programs may perform as well as other interventions with regard to the proportion of participants maintaining complete abstinence at three to nine months, drinking intensity (drinks per drinking day), and percentage of days of heavy drinking. They may perform slightly better than other interventions in percentage of days abstinent.

The U.S. Preventive Services Task Force recommends screening adults 18 years and older for unhealthy alcohol use in primary care settings and providing brief behavioral counseling interventions to reduce unhealthy alcohol use (Grade B recommendation).[8] When family physicians identify patients with unhealthy alcohol use, they should assess for alcohol use disorder and, when clinically indicated, offer pharmacotherapy and referral to behavioral support services.[9,10] Many licensed addiction treatment providers offer 12-step facilitation as part of their programming, although licensed addiction treatment access is limited in many parts of the country. AA programs can be found in most communities and are increasingly available online.[6]

The practice recommendations in this activity are available at http://www.cochrane.org/CD012880.

Editor's Note: The number needed to treat and confidence interval reported in this Cochrane for Clinicians were calculated by the authors based on raw data provided in the original Cochrane review. Dr. Salisbury-Afshar is a contributing editor for *AFP.*

References

1. Kelly JF, Humphreys K, Ferri M. Alcoholics Anonymous and other 12-step programs for alcohol use disorder. *Cochrane Database Syst Rev.* 2020;(3):CD012880.
2. Mokdad AH, Marks JS, Stroup DF, et al. Actual causes of death in the United States, 2000 [published correction appears in *JAMA*. 2005; 293(3):298]. *JAMA*. 2004;291(10):1238-1245.
3. Gonzales K, Roeber J, Kanny D, et al.; Centers for Disease Control and Prevention. Alcohol-attributable deaths and years of potential life lost—11 states, 2006-2010. *MMWR Morb Mortal Wkly Rep.* 2014;63(10):213-216. Accessed July 24, 2020. https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6310a2.htm
4. Sacks JJ, Gonzales KR, Bouchery EE, et al. 2010 national and state costs of excessive alcohol consumption. *Am J Prev Med.* 2015;49(5):e73-e79.
5. Alcoholics Anonymous. Historical data: the birth of A.A. and its growth in the U.S./Canada. Accessed July 24, 2020. https://www.aa.org/pages/en_US/historical-data-the-birth-of-aa-and-its-growth-in-the-uscanada
6. Alcoholics Anonymous. A.A. near you. Accessed July 24, 2020. https://www.aa.org/pages/en_US/find-aa-resources
7. Humphreys K. Professional interventions that facilitate 12-step self-help group involvement. *Alcohol Res Health*. 1999;23(2):93-98.
8. U.S. Preventive Services Task Force. Unhealthy alcohol use in adolescents and adults: screening and behavioral counseling interventions. November 13, 2018. Accessed July 24, 2020. https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/unhealthy-alcohol-use-in-adolescents-and-adults-screening-and-behavioral-counseling-interventions
9. Winslow BT, Onysko M, Hebert M. Medications for alcohol use disorder. *Am Fam Physician*. 2016;93(6):457-465. Accessed July 24, 2020. https://www.aafp.org/afp/2016/0315/p457.html
10. Salisbury-Afshar E, Fleming M. Identification of and treatment for unhealthy alcohol use in primary care settings [editorial]. *Am Fam Physician*. 2019;99(12):733-734. Accessed July 24, 2020. https://www.aafp.org/afp/2019/0615/p733.html

Structural MRI for the Early Diagnosis of Alzheimer Disease in Patients with MCI

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Clinical Question

Is magnetic resonance imaging (MRI) accurate in the early diagnosis of Alzheimer disease in patients with mild cognitive impairment (MCI)?

Evidence-Based Answer

There is insufficient evidence to recommend structural brain MRI to diagnose Alzheimer disease in patients with MCI. Because of its low accuracy, it should not be used as a stand-alone tool in identifying evidence of Alzheimer disease in patients with MCI.[1] (Strength of Recommendation: B, based on inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

Alzheimer disease is the most common cause of dementia, accounting for 60% to 80% of dementia cases.[2] Onset typically occurs after 65 years of age and is often preceded by a predementia phase called MCI.[2] MCI has progressed to dementia when these cognitive changes significantly interfere with a person's work or usual daily activities.[3] Identifying which patients with MCI will progress to Alzheimer disease could be helpful in early intervention and planning for patients and their families.

MCI is characterized by a noticeable decline in cognition or memory with preserved function in daily living.[4] Although memory difficulty is the most common symptom in patients with MCI, there can also be deficits in attention, executive functioning, language, and visuospatial skills. People with MCI and memory loss develop Alzheimer disease at a rate of about 10% to 15% annually compared with 1% to 2% per year in the general population.[5] Currently there is no clinical tool to reliably identify which patients with MCI will go on to develop Alzheimer disease.

The authors of this Cochrane review assessed the diagnostic accuracy of structural brain MRI in detecting Alzheimer disease in patients with MCI.[1] They included 33 prospective cohort studies (N = 3,935) published from 1999 to 2019 from tertiary care centers in Europe (19 studies), North America (nine studies), North America and Europe

(three studies), Taiwan (one study), and Australia (one study).

Patients were diagnosed with MCI by history and neuropsychological testing; their baseline Mini Mental State Examination score was 22 to 29 (median = 27). Because the criteria for diagnosing MCI have changed over the past 20 years, the review authors accepted studies that used varying diagnostic criteria and included all subtypes of MCI (e.g., amnestic single domain, amnestic multiple domain, nonamnestic single domain, nonamnestic multiple domain). Patients with MCI and a median age of 73 years (range = 63 to 87 years) underwent MRI to detect atrophy in brain regions associated with cognition (hippocampus, 22 studies; medial temporal lobe, seven studies; lateral ventricles, five studies). This was compared with the reference standard of follow-up and progression to diagnosis of Alzheimer disease using standard clinical criteria.[5]

Of the almost 4,000 patients included in these 33 studies, 34% developed Alzheimer dementia during a mean clinical follow-up ranging from one to almost eight years (median = two years).[2] Of the patients who did not advance to Alzheimer disease, the majority (99%) remained stable with MCI, whereas few (1%) developed other forms of dementia.

MRI of the hippocampus had the highest positive and negative predictive values. The authors concluded that MRI is not accurate enough to predict which patients with MCI will progress to Alzheimer disease because it will miss about 14% to 22% of cases and falsely predict approximately 48% to 60% of cases.

Overall, the results of this Cochrane review are limited because the studies used different methods for diagnosing MCI and performing brain MRI measurements, and length of patient follow-up varied widely.

Although brain imaging with computed tomography or MRI may be useful in detecting reversible causes of cognitive decline or vascular causes of dementia,[6] MCI and dementia caused by Alzheimer disease are still diagnosed based on clinical evidence of a change in cognition with impairments in memory, executive functioning, attention, or language.[3,4,7] There is not yet a reliable diagnostic tool to predict who will or will not develop Alzheimer disease.

SUMMARY TABLE

Utility of MRI for Diagnosing the Progression of Mild Cognitive Impairment to Alzheimer Disease*

Region of MRI	Participants (studies)	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Hippocampus	2,209 (22)	73	71	52	86
Medial temporal lobe	1,077 (7)	64	65	44	81
Lateral ventricles	1,077 (5)	57	64	40	78

MRI = magnetic resonance imaging; NPV = negative predictive value; PPV = positive predictive value.

*—Assuming Alzheimer disease prevalence of 30%.

The practice recommendations in this activity are available at http://www.cochrane.org/CD009628.

Editor's Note: The positive and negative predictive values reported in this Cochrane for Clinicians summary table were calculated by the authors based on raw data provided in the original Cochrane review.

References

1. Lombardi G, Crescioli G, Cavedo E, et al. Structural magnetic resonance imaging for the early diagnosis of dementia due to Alzheimer's disease in people with mild cognitive impairment. *Cochrane Database Syst Rev*. 2020;(3):CD009628.
2. Alzheimer's Association. What is Alzheimer's disease? Accessed July 1, 2020. https://www.alz.org/alzheimers-dementia/what-is-alzheimers
3. McKhann GM, Knopman DS, Chertkow H, et al. The diagnosis of dementia due to Alzheimer's disease: recommendations from the National Institute on Aging–Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimers Dement*. 2011;7(3):263-269.
4. Albert MS, DeKosky ST, Dickson D, et al. The diagnosis of mild cognitive impairment due to Alzheimer's disease: recommendations from the National Institute on Aging–Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimers Dement*. 2011;7(3):270-279.
5. Petersen RC, Roberts RO, Knopman DS, et al. Mild cognitive impairment: ten years later. *Arch Neurol*. 2009;66(12):1447-1455.
6. National Institute for Health and Care Excellence. Dementia: assessment, management and support for people living with dementia and their carers. NICE guideline [NG97]. June 20, 2018. Accessed July 1, 2020. https://www.nice.org.uk/guidance/ng97
7. McKhann G, Drachman D, Folstein M, et al. Clinical diagnosis of Alzheimer's disease: report of the NINCDS-ADRDA Work Group under the auspices of Department of Health and Human Services Task Force on Alzheimer's disease. *Neurology*. 1984;34(7):939-944. ■