Cochrane for Clinicians

Putting Evidence Into Practice

Mini-Cog, IQCODE, MoCA, and MMSE for the Prediction of Dementia in Primary Care

Christi Stewart, MD, FAAFP, FAAHPM, HMDC; Jonathan Stewart, MD, FAAFP; Sarah Stubbs, MD, FAAFP; and John W. Epling, MD, MSEd, FAAFP, Carilion Clinic and the Virginia Tech Carilion School of Medicine, Roanoke, Virginia

Author disclosure: No relevant financial relationships.

Clinical Question

How well do four common, brief clinical assessments (Mini-Cog, Informant Questionnaire on Cognitive Decline in the Elderly [IQCODE], Montreal Cognitive Assessment [MoCA], and Mini-Mental State Examination [MMSE]) predict dementia in primary care?

Evidence-Based Answer

There is insufficient evidence to support the accuracy of these tools to predict dementia in primary care.[1-4] (Strength of Recommendation: A, systematic reviews of diagnostic test studies.)

Practice Pointers

Dementia causes difficulties with memory, language, and executive functioning that affect patients' abilities to perform activities of daily living. There are several different types of dementia, but Alzheimer disease is the most common. Dementia is estimated to affect 11% of Americans 65 years and older.[5,6] Validated tools are needed to screen for dementia and memory problems to allow for further evaluation and intervention. Four Cochrane reviews examining the use of various outpatient cognitive screening tools were published in 2021.[1-4]

The first Cochrane review evaluated the two-part Mini-Cog cognitive screening test for dementia.[1] The review included four randomized trials and 1,517 patients from the United States and Europe with a baseline prevalence of dementia that varied from 5% to 90%. All studies were performed in a primary care setting and varied widely in methods—which the authors suggest could have overestimated accuracy—and in clinical populations and results. Sensitivity of the Mini-Cog ranged from 76% to 100%, and specificity ranged from 27% to 85%. Only one (n = 383) of the four studies was found to be at low risk of bias, and it demonstrated a sensitivity of 76% and a specificity of 73%. Because the review included only a single high-quality study and demonstrated significant heterogeneity across the four studies, the authors did not recommend the routine use of the Mini-Cog for dementia screening.

A second Cochrane review examined the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE), available as a 16- or 26-item test for cognitive impairment.[2] This questionnaire asks an acquaintance to judge on a scale of 1 to 5 how the patient's memory has changed over the course of 10 years in a variety of parameters (1 = much improved, 2 = a bit improved, 3 = unchanged, 4 = a bit worse, and 5 = much worse). The Cochrane review identified only one study that took place at a primary care clinic site in Hawaii and included 230 participants of self-identified Japanese-American descent. The prevalence of dementia in this cohort was 16 cases among 230 participants (7%). The study was at high risk of bias in multiple areas, including patient selection, unclear processes for test administration and results reporting, and use of a reference standard for clinical diagnosis of dementia that the reviewers did not consider standard practice. The authors of the study reported a negative predictive value of greater than 90% at all studied thresholds (reported as 3.2 to 3.7 on a scale of 1 to 5) but a positive predictive value of less than 50% for cutoff points below 3.6, indicating limited clinical utility of a positive result and the potential for large numbers of patients who do not have dementia to be referred for specialist evaluation.

A third Cochrane review sought to determine the accuracy of the Montreal Cognitive Assessment (MoCA) for the detection of dementia.[3] The authors included seven studies of 9,422 patients from multiple developed countries (the prevalence of dementia ranged from 5% to 54%). A single study in China accounted for 8,411 patients and had a baseline prevalence of dementia of 5%. Significant heterogeneity among the seven studies made direct comparison of the findings difficult. Four studies used the standard threshold for mild cognitive impairment (a score of less than 26), and three studies used lower scores. As noted by the developers of the MoCA, although a score of 18 may be considered the cutoff for Alzheimer disease, a standard cutoff score for dementia has not been established.[7] Of the four studies using a score of less than 26 on the MoCA, there was at least a 94% sensitivity in detecting patients with dementia; however, specificity for these diagnoses was poor (60% and

These are summaries of reviews from the Cochrane Library.

This series is coordinated by Corey D. Fogleman, MD, assistant medical editor.

A collection of Cochrane for Clinicians published in *AFP* is available at https://www.aafp.org/afp/cochrane.

CME This clinical content conforms to AAFP criteria for CME. See CME Quiz on page 582.

lower). None of the studies evaluating MoCA in this review were performed in a primary care setting, which would limit the use of this test in a typical screening population.

A fourth Cochrane review on the Mini-Mental State Examination (MMSE) included 11 studies of 1,569 patients in the United States, Europe, and Japan.[4] The authors of the studies administered the MMSE to a group of patients already assessed as having mild cognitive impairment (using a variety of methods) and observed them for the development of dementia (diagnosed by accepted structured clinical criteria). Ultimately, 36.5% of the overall cohort developed dementia. The studies were heterogeneous and used a variety of threshold scores for diagnosis, which prevented the authors from pooling the results in the usual fashion. The sensitivity and specificity of the MMSE ranged from 23% to 76% and 40% to 94%, respectively, for the development of all-cause dementia. For Alzheimer disease, the sensitivity and specificity of the MMSE ranged from 27% to 89% and 33% to 90%, respectively. The single study that examined the prediction of vascular dementia found a sensitivity of 36% and specificity of 80%. No studies were found on the diagnosis of frontotemporal or Lewy body dementia. The low sensitivity for the MMSE makes it a poor choice for primary care–based screening.

A 2020 comparative effectiveness review on the diagnosis and treatment of Alzheimer disease was more favorable toward use of the MoCA.[8] This review differed from the Cochrane reviews in that it included only studies of patients in whom cognitive impairment was suspected (the baseline prevalence of Alzheimer dementia varied from 50% to 71%), studied only Alzheimer disease (compared with other forms of dementia), and found fewer studies for each of the tests evaluated. The locations of the included studies were not reported. In addition, the review used the medians of sensitivity and specificity for the individual tests, which may give a false sense of precision about these tests because the range of results was so large.

The evidence from the Cochrane reviews described here supports the conclusion of the 2020 U.S. Preventive Services Task Force statement on screening for cognitive impairment: The evidence is lacking, and the balance of benefits and harms of screening for cognitive impairment cannot be determined.[9]

The practice recommendations in this activity are available at https://www.cochrane.org/CD011415, https://www.cochrane.org/CD010771, https://www.cochrane.org/CD010775, and https://www.cochrane.org/CD010783.

References

1. Seitz DP, Chan CC, Newton HT, et al. Mini-Cog for the detection of dementia within a primary care setting. *Cochrane Database Syst Rev.* 2021;(7):CD011415.
2. Burton JK, Fearon P, Noel-Storr AH, et al. Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE) for the detection of dementia within a general practice (primary care) setting. *Cochrane Database Syst Rev.* 2021;(7):CD010771.
3. Davis DH, Creavin ST, Yip JL, et al. Montreal Cognitive Assessment for the detection of dementia. *Cochrane Database Syst Rev.* 2021;(7):CD010775.
4. Arevalo-Rodriguez I, Smailagic N, Roqué-Figuls M, et al. Mini-Mental State Examination (MMSE) for the early detection of dementia in people with mild cognitive impairment (MCI). *Cochrane Database Syst Rev.* 2021;(7):CD010783.
5. 2021 Alzheimer's disease facts and figures. *Alzheimers Dement.* 2021;17(3):327-406.
6. Mehta KM, Yeo GW. Systematic review of dementia prevalence and incidence in United States race/ethnic populations. *Alzheimers Dement.* 2017;13(1):72-83.
7. FAQ. MoCA Cognitive Assessment. Accessed September 18, 2021. https://www.mocatest.org/faq/
8. Fink HA, Hemmy LS, Linskens EJ, et al. Diagnosis and treatment of clinical Alzheimer's-type dementia: a systematic review. Agency for Healthcare Research and Quality; 2020. AHRQ report no. 20-EHC003. Accessed March 24, 2022. https://www.ncbi.nlm.nih.gov/books/NBK556556/
9. Owens DK, Davidson KW, Krist AH, et al. Screening for cognitive impairment in older adults: US Preventive Services Task Force recommendation statement. *JAMA.* 2020;323(8):757-763.

SSRIs and SNRIs for Premature Ejaculation in Adult Men

Meera Sunder, MD, Cambridge Health Alliance, Cambridge, Massachusetts

Author disclosure: No relevant financial relationships.

Clinical Question

Are selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) safe and effective for the treatment of premature ejaculation in adult men?

Evidence-Based Answer

SSRIs and SNRIs increase the ejaculatory latency time (mean difference [MD] = 3.09 minutes; 95% CI, 1.94 to 4.25 minutes) and improve the satisfaction of the experience (relative risk [RR] = 1.63; 95% CI, 1.42 to 1.87) compared with placebo. However, adverse effects cause a substantial number of men to stop treatment (RR = 3.80; 95% CI, 2.61 to 5.51).[1] (Strength of Recommendation: B, inconsistent or limited-quality patient-oriented evidence.)

Practice Pointers

According to the International Society for Sexual Medicine, premature ejaculation is a sexual dysfunction characterized by penile ejaculation that always or nearly always occurs before or within one minute of sexual penetration.[2] It is either present from the patient's first sexual encounter (lifelong premature ejaculation) or a bothersome decrease in ejaculatory latency (secondary or acquired), often to three minutes or less. Causes of acquired premature ejaculation

include sexual performance anxiety, psychological and relationship problems, erectile dysfunction, and use of or withdrawal from medications or recreational drugs. Rarely, hyperthyroidism or prostatitis can contribute to premature ejaculation. In lifelong and acquired premature ejaculation, there is an inability to delay ejaculation during all or nearly all instances of sexual penetration, leading to personal distress or avoidance of sexual intimacy.[1,3,4]

Premature ejaculation is estimated to occur in 4% to 39% of men in the general population.[5] Premature ejaculation can be treated using a multimodal approach, including behavioral therapy, topical agents, and oral medications.[5] The authors of this Cochrane review sought to determine whether SSRIs or SNRIs can improve symptoms of premature ejaculation in adult men.

This Cochrane review included 31 randomized controlled trials in which 8,254 participants received SSRIs (n = 4,990), another drug, or placebo.[1] The studies included only men 18 years and older with lifelong premature ejaculation; 4,193 men received dapoxetine, an SSRI that is marketed to promote ejaculatory delay and is not available in the United States. The studies were conducted across 14 countries, including three in the United States and Canada. A range of other SSRIs and SNRIs were used at different dosages in the studies, including fluoxetine (Prozac), duloxetine (Cymbalta), citalopram (Celexa), sertraline (Zoloft), paroxetine (Paxil), escitalopram (Lexapro), and fluvoxamine. In some studies, the SSRI was prescribed as a daily medication for premature ejaculation. In other studies, the medication was meant to be used on demand just before sexual activity. Dapoxetine, paroxetine, and citalopram were in the on-demand arms.

Perception of change with treatment was evaluated using the Clinical Global Impression of Change questionnaire, a validated clinician-completed instrument to assess response to treatment. Participants who received an SSRI or SNRI were two times more likely to report change with treatment compared with those who received placebo (number needed to treat [NNT] = 5; 95% CI, 4 to 7). Participants who received an SSRI or SNRI had increased intravaginal ejaculatory latency time compared with those who received placebo (MD = 3.09 minutes; 95% CI, 1.94 to 4.25 minutes). Satisfaction with intercourse and perceived control over ejaculation with dapoxetine were measured using a validated instrument called the Premature Ejaculation Profile questionnaire. Participants treated with an SSRI or SNRI were more likely to experience satisfaction (RR = 1.63; 95% CI, 1.42 to 1.87) and to perceive control over ejaculation (RR = 2.29; 95% CI, 1.72 to 3.05) compared with those who were given placebo.

When dapoxetine was used daily or on demand just before sexual activity, the effectiveness of 30-mg and 60-mg dosing for premature ejaculation was similar for all of the above outcomes. However, participants who received 60 mg of dapoxetine daily or on demand were much more likely to withdraw from the studies because of adverse effects compared with those who received 30 mg of dapoxetine. A substantial number of participants withdrew from the studies because of adverse effects with SSRI use (number needed to harm [NNH] = 33; 95% CI, 20 to 59). The adverse effects experienced by these participants were not described in this review.

Similar to the findings in an older meta-analysis,[6] this Cochrane review revealed that paroxetine was the most effective long-acting SSRI (MD for increased latency time = 6.51 minutes; 95% CI, 0.33 to 12.68 minutes). Citalopram was also highly effective (MD for increased latency time = 4.85 minutes; 95% CI, 3.14 to 6.56 minutes).

It is important to identify and address acquired causes of premature ejaculation at presentation. The International Society for Sexual Medicine supports considering off-label daily dosing of SSRIs such as paroxetine, sertraline, citalopram, and fluoxetine, as well as the tricyclic antidepressant clomipramine (Anafranil) or the off-label, on-demand dosing of dapoxetine for the treatment of lifelong and acquired premature ejaculation.[2] Physicians should monitor patients closely for adverse effects during treatment.

The practice recommendations in this activity are available at https://www.cochrane.org/CD012799.

Editor's Note: The NNT and NNH and their corresponding CIs reported in this Cochrane for Clinicians were calculated by the authors based on raw data provided in the original Cochrane review.

References

1. Sathianathen NJ, Hwang EC, Mian R, et al. Selective serotonin re-uptake inhibitors for premature ejaculation in adult men. *Cochrane Database Syst Rev*. 2021;(3):CD012799.
2. Althof SE, McMahon CG, Waldinger MD, et al. An update of the International Society of Sexual Medicine's guidelines for the diagnosis and treatment of premature ejaculation (PE). *Sex Med*. 2014;2(2):60-90.
3. Serefoglu EC, McMahon CG, Waldinger MD, et al. An evidence-based unified definition of lifelong and acquired premature ejaculation: report of the second International Society for Sexual Medicine ad hoc committee for the definition of premature ejaculation. *Sex Med*. 2014;2(2):41-59.
4. Rowland DL, Patrick DL, Rothman M, et al. The psychological burden of premature ejaculation. *J Urol*. 2007;177(3):1065-1070.
5. Gillman N, Gillman M. Premature ejaculation: aetiology and treatment strategies. *Med Sci (Basel)*. 2019;7(11):102.
6. Waldinger MD, Zwinderman AH, Schweitzer DH, et al. Relevance of methodological design for the interpretation of efficacy of drug treatment of premature ejaculation: a systematic review and meta-analysis. *Int J Impot Res*. 2004;16(4):369-381. ■