Topic Brief: Colorectal Cancer Screening and Parkinson's Disease

Date: 1/13/2022
Nomination Number: 0967

Purpose: This document summarizes the information addressing a nomination submitted on December 12, 2021 through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program's decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

Issue: This nomination was submitted by an individual who is concerned about the potential risk of transmission of neurodegenerative diseases, such as Parkinson's disease, via colonoscopy. The nominator requests that further primary research be conducted to elucidate whether colorectal cancer (CRC) screening via colonoscopy may carry risk of causing Parkinson's disease.

Program Decision: The EPC program synthesizes and appraises existing evidence and does not conduct primary research. As such, this nomination is out of the scope of the EPC program. We have included additional information and related resources that might be useful to the nominator.

Assessment Methods

We assessed nomination for priority for a systematic review or other AHRQ EPC report using a hierarchical process based on established section criteria. Assessment of each criteria determined the need to evaluate the next one.

1. Determine the *appropriateness* of the nominated topic for inclusion in the EHC program.
2. Establish the overall *importance* of a potential topic as representing a health or healthcare issue in the United States.
3. Determine the *desirability of new evidence review* by examining whether a new systematic review or other AHRQ product would be duplicative.
4. Assess the *potential impact* a new systematic review or other AHRQ product.
5. Assess whether the *current state of the evidence* allows for a systematic review or other AHRQ product (feasibility).
6. Determine the *potential value* of a new systematic review or other AHRQ product.

Background and Related Resources

Colorectal cancer (CRC) is the second leading cause of cancer death in the United States and the world and is expected to represent almost eight percent of all new cancer cases in the United States in 2021, according to an analysis done by the National Cancer Institute.[1, 2]

The nominator for this topic expressed concerns about a theoretical link between CRC screening and Parkinson's disease. In support, they cite two publications, one of which is the proceedings of the National Institute on Aging meeting discussing evidence gaps regarding the risks of developing clinical Alzheimer's, Parkinson's, and other neurodegenerative diseases via transmission of disease-associated proteins with sub-clinical disease (i.e. asymptomatic disease among individuals who may have Parkinson's associated proteins in their gut neuronal tissue) through invasive laboratory or clinical procedures.[3, 4] Brief searches in PubMed for systematic reviews or clinical trials of the topic found two systematic reviews on the association of gut proteins and Parkinson's disease.[5, 6] However, primary research would be needed to assess the effects of microbiota transfer and risk of translocation by colonoscopy.

The United States Preventive Services Task Force (USPSTF) 2021 recommendation statement, which evaluated the benefits and harms of several methods of colorectal cancer screening, does not describe CRC risks related to Parkinson's disease, and ultimately recommends that CRC screening be offered to average risk, asymptomatic adults ages 45 to 75 years.[7] The CDC continues to recommend a variety of different CRC screening methods, and patients should talk to their doctor to ascertain if any of these options might be best for them. These screening tests, which are for average risk adults without family genetic predisposition to colon cancer or polyps, include a variety of stool tests, flexible sigmoidoscopy, colonoscopy or computed tomography colonography.[8] We find no support in the literature at this time for the concern of the nomination that colonoscopy might be linked to developing Parkinson's disease.

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Conflict of Interest: None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

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