Advisory Panel on Assessment of Prevention, Diagnosis, and Treatment Options Meeting Summary

February 2014

Overview

On January 13–14, 2014, the PCORI Advisory Panel on Assessment of Prevention, Diagnosis, and Treatment Options convened in Washington, DC, for its third in-person meeting.

The 21-member panel includes caregivers, patient-caregiver advocates, clinicians, researchers, organizational providers, and representatives from payers, industry and purchasers. The panel was joined by PCORI staff. The meeting was open to the public via teleconference, and slides and meeting materials were posted to the website in advance.

The panelists discussed research gaps and prioritized research questions for treatment strategies for migraine headaches and treatments to stabilize symptoms of osteoarthritis, two of the four high-priority research topics that were identified in April during the first advisory panel meeting. The panel also heard updates on the other two previously selected high-priority research topics: bipolar disorder and antipsychotic use in children, adolescents and young adults and ductal carcinoma in situ.

In addition, the panel discussed and prioritized 14 new topics for PCORI to consider for research funding.

Related Information

- About This Advisory Panel
- Meeting Details and Materials
- Orientation to PCORI's Research Prioritization
- Assessment of Prevention, Diagnosis, and Treatment Options Research Briefs

The Patient-Centered Outcomes Research Institute (PCORI) is an independent organization created to help people make informed healthcare decisions.

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Previously Selected High-Priority Research Topics

PREVENTIVE TREATMENTS FOR EPISODIC AND CHRONIC MIGRAINE IN ADULTS

Dr. Doug McCrory from the Duke Evidence Synthesis Group presented an overview of the group's report on migraine headache. The panelists used prioritization software from the RTI International-University of North Carolina at Chapel Hill (RTI-UNC) Evidence-Based Practice Center to rank research questions (see **Appendix A**) after they discussed the following research gaps:

Preventive treatments. There is a need for comparative effectiveness research on preventative pharmaceutical treatments as well as non-drug therapies (e.g., behavioral therapies, spinal manipulation, acupuncture, exercise). With the exception of Botox, there have not been many head-to-head trials of prevention treatments in chronic migraine. The panel also pointed out the need to study adherence to preventive treatments.

Comorbidities. The panel discussed how to improve outcomes for the many migraine patients who have depression and anxiety. Panelists noted that tailoring of preventive treatment on the basis of comorbidities is not well supported by research.

Quality of Life. The panel expressed concern that established instruments, such as the Headache Impact Test (HIT-6), may be less applicable to chronic migraine and very-high-frequency migraine than they are to episodic migraine.

Diagnosis. Research is needed to help minimize over-diagnosis and under-diagnosis of migraines. The panel noted that some patients do not fit into any of the International Classification of Headache Disorder categories.

Transformation from episodic to chronic migraine. There is a need to identify patient factors that are related to the transformation from episodic to chronic migraine and treatment approaches that would minimize that progression.

Treatment Outcomes. It is critical to identify which outcomes are most important to migraine patients.

EFFECTIVENESS OF ALTERNATIVE STRATEGIES FOR STABILIZING OSTEOARTHRITIS SYMPTOMS

Dr. Jennifer Gierisch from the Duke Evidence Synthesis Group presented an overview of the group's report on osteoarthritis. The panel used the RTI-UNC prioritization software to rank research questions (see **Appendix B**) after they discussed the following research gaps:

Preventive Options. There is an interest in addressing the sociodemographic differences found in osteoarthritis patients. Although there are a few quantifiable and modifiable risk factors for osteoarthritis, such as joint injuries early in life, research is needed to identify other risk factors.

Transition from Surgical to Nonsurgical Care. There is a need to create functional assessments for patients and clinicians who are using shared decision making.

Adherence. Patient non-adherence is common. It is not known whether objective self-monitoring systems, such as Fitbit®, improve adherence.

Complementary and Alternative Medicine. Further research is needed on complementary and alternative medicine treatments for osteoarthritis patients.

Cultural Preferences and Patient Success. Matching patient preferences and values to treatment modalities may help improve patient success. Further research is needed on cultural preferences, patient engagement, and shared decision making strategies to modify the trajectory of osteoarthritis.

Treatment Outcomes. Because of variations in pain tolerance, lifestyles, and goals, patients differ in how they rank outcomes. The panel pointed to the need to find better means to help patients sustain treatment or lifestyle behaviors long-term to improve their health outcomes.

Comorbidities. There is a need for research that examines the effects of comorbidity on treatments effects and patient expectations.

BIPOLAR DISORDER AND DUCTAL CARCINOMA IN SITU

PCORI staff reported that workgroup meetings had been held in December 2013 on two topics previously assigned high priority: bipolar disorder and antipsychotic use in children, adolescents, and young adults and DCIS. These topics were also included in the recent PCORI Funding Announcement for Pragmatic Clinical Studies and Large Simple Trials to Evaluate Patient Centered Outcomes.

Prioritization of Topics

After discussion, the panel prioritized 14 new research topics as follows. Key discussion points are described below each topic.

1. **Identifying lung cancer in people with lung nodules**
   Lung nodules are small masses of tissue that appear as “shadows” on a chest X-ray or CT scan. This topic focuses on management of people with nodules because they may indicate, or progress to, malignancy. There is wide opportunity for development in both diagnostic strategies, non-evasive technologies, and imaging strategies.

2. **Treatment options for opioid substance abuse**
   Opioid abuse is a prevalent problem with about 4.5 percent (14.1 million) of US adults in a national survey reporting nonmedical use of prescription opioids in the past year. There is a significant impact on patients' quality of life, productivity, functional capacity, mortality, and use of health services. New comparative effective research could focus on access to care, particularly for rural populations. Other research could compare various treatment modalities by population with a focus on combinations of detox, counseling, continuing care, medically assisted treatment, and complementary and alternative therapies. Research could also examine prevention strategies.

3. **Treatment options for autism**
   Autism spectrum disorders includes mild to severe developmental disorders characterized by significant social and communication impairments. Various types of treatments have been used. Drug treatment has focused on reducing aggression and self-injury behaviors. Standard treatment has been behaviorally based. Future comparative effectiveness research could focus on the long-term benefits of early intensive behavioral interventions, evaluating the effectiveness of transition programs (e.g., vocational programs) and community-based therapy.

4. **Treatment options for multiple sclerosis**
   Multiple sclerosis is a neurologic condition typically affecting young adults and is characterized by damage (demyelination) of nerves within the central nervous system. There may be a significant impact on patient quality of life, including, for example, impaired mobility and balance, chronic pain, and cognitive impairment. Many clinical trials have compared the efficacy of pharmaceutical treatments and exercise regimens, with less emphasis on complementary and alternative treatment regimens. Future research could compare combinations of treatment modalities to well-defined usual care. Coordination of care could also be examined. Future research could focus on symptom management and maintenance of quality of life as the disease progresses.

5. **Proton Beam Therapy for Breast, Lung, and Prostate Cancer**
   Proton beam therapy uses a beam of protons to irradiate diseased tissue, most often in the treatment of cancer. Like robotic surgery, proton beam therapy has shown rapid uptake by the medical community. There is an opportunity to evaluate the efficacy of proton beam treatments versus 3D conformal and intensity-modulated radiation therapy.

6. **Assessment of benefits and harms of pelvic floor mesh implants**
   Pelvic floor dysfunction has a significant impact on patient quality of life. Pelvic floor dysfunction occurs when the muscles in the pelvic floor are excessively weak or tight or there are joint problems in the surrounding area. The most common types of pelvic floor dysfunction

contribute to urinary incontinence, fecal incontinence, and pelvic organ prolapse. During pelvic floor surgery, mesh is sometimes inserted to provide support. Comparative effective research could compare treatment outcomes with and without mesh. Since different types of surgeons perform the procedure, future research may need to examine physician training.

7. **Biomarker testing for patients with malignancy**

   A biomarker is a measurable substance that reflects the presence or severity of disease. Biomarkers have been valuable for diagnosis of lung, colorectal, and breast cancers. Since the data regarding genetically targeted therapies is housed in silos, this may be an opportunity for PCORNet to share information and enhance discovery of different targets, receptors, and biomarkers. The generality of this topic may allow PCORI to support multiple research approaches.

8. **Treatment options for psoriasis**

   Psoriasis is an autoimmune disease that primarily affects the skin. The major treatment categories for psoriasis are steroids, immunosuppressants, biologicals, and alternative remedies. The panel suggested there may be a need for direct comparisons of psoriasis treatments, however, the Agency for Healthcare Research and Quality recently conducted a systemic review that focused on treatments for psoriasis and the National Institutes of Health has three major projects examining the research gaps.

9. **Treatments for hearing loss**

   Hearing loss is a sudden or gradual decrease in hearing that can range from mild to profound. Quality of life declines due to social isolation, decreased activities of daily living, and loss or reduction of employment. Additional research comparing treatments and assessing patient preferences and treatment adherence would be valuable.

10. **Treatments for hypercholesterolemia**

    Hypercholesterolemia is high blood cholesterol, particularly high levels of low-density lipoprotein cholesterol. Statins are usually used as the first line of pharmacologic treatments, but many people cannot tolerate them, mainly due to muscle toxicity. No systematic reviews were identified on treatment of hypercholesterolemia in these patients.

11. **Robotic surgery for urologic and gynecologic cancers**

    Robotic surgery is a procedure in which a surgeon uses a computer that remotely controls instruments attached to a robot. This technique has been taken up quickly in a variety of specialties, particularly treatment of urological and gynecological cancers. Many current comparative effective trials focus on the skill of the surgeon, as opposed to the risks and

benefits of the procedure, and on short-term outcomes rather than long term outcomes and reoccurrence.

12. **Treatment options involving mesh for the management of inguinal and abdominal hernia**

    A hernia is a condition in which weakness in fascia results in bulging of abdominal contents from one cavity into another. The use of mesh to strengthen the weak area in the repair of abdominal and inguinal hernias is common. Factors associated with treatment success may include the type of mesh, the skill of the surgeon, and the type of surgical procedures employed.

13. **Treatment options for pemphigus vulgaris**

    Pemphigus vulgaris is a rare autoimmune disease that primarily causes ulcers in the mouth and on the skin. It significantly impacts quality of life and physical appearance, interferes with the ability to eat, and may cause itching and pain. Clinical trials have generally been small and of poor quality. Comparative effectiveness research could provide evidence to support one treatment modality over another. Additional work is needed to explore patient preferences with regard to treatment side effects.

14. **Management of arrhythmogenic right ventricular dysplasia**

    Arrhythmogenic right ventricular dysplasia (ARVD), although a rare disease, is a leading cause of sudden death in young athletes and other young adults. Currently, very little research and no systematic reviews have been identified. The panel discussed whether the question should be reframed to look at many causes of athlete sudden death and the ramifications of ARVD for quality of life. Comparative effectiveness studies may be based on treatment, prevention, screening, and management of those who have ARVD.

Next Steps

The next Advisory Panel meeting on Assessment of Prevention, Diagnosis, and Treatment Options will be held on April 28–29, 2014, in Washington, DC. At this meeting, the panel will prioritize additional research topics.

Appendix A: Rankings of Research Questions on Migraine Headache

1. What strategies for treatment of individual headache episodes are most effective and least likely to promote medication-overuse headache in patients with high frequency episodic or chronic migraine?
2. How does the comorbidity of depression and related psychological disorders, metabolic disorders, and gastrointestinal disorders affect the efficacy of preventive pharmacologic or nonpharmacologic treatments for episodic or chronic migraine?
3. What are the comparative safety, tolerability, and effectiveness of nonpharmacologic versus pharmacologic versus combined (nonpharmacologic plus pharmacologic) treatments in the prevention of chronic migraine?
4. What are the most important patient-centered outcomes for patients receiving pharmacologic or nonpharmacologic treatments for the prevention of episodic or chronic migraine? How do these differ depending on patient or provider perspective?
5. What patient, treatment, and other factors (e.g., age of onset, diet, psychosocial stress, early-life trauma) are associated with the development of chronic migraine or the transformation from episodic to chronic migraine?
6. Are combinations of pharmacologic treatments effective in preventing episodic migraine in patients for whom treatment with a single preventive drug has been either ineffective or intolerable? Are there fewer or more adverse events when using low-dose polypharmacy versus single agents at higher doses? Do treatment efforts that align with patient-defined values improve the efficacy of preventive treatments for episodic and chronic migraine?
7. How should research on preventive pharmacologic or nonpharmacologic treatments for chronic migraine define treatment success? How should patients participate in defining treatment success?
8. What biomarkers help predict response to preventive treatment in patients with episodic or chronic migraine?
9. What are the patient factors that determine whether patients with episodic migraine are prescribed, take, and adhere to preventive approaches (as opposed to acute treatment for episodic migraines without preventive treatment)?
10. What are the effects of decision-making tools compared to usual care to assist patients and providers with shared decision making regarding migraine, with a focus on individuals with low health literacy and limited health access? What are the optimal format, content, and timing for these? What is the value in terms of treatment outcome of providing patients multiple tools for treatment?
11. Which disease and patient characteristics (duration, severity, frequency of attacks, comorbidities) affect the efficacy of preventive pharmacologic treatments for chronic migraine?
12. Which disease and patient characteristics (duration, severity, frequency of attacks, comorbidities) affect the efficacy of preventive nonpharmacologic treatments for chronic migraine?

13. What is a valid disease model to accurately describe disease characteristics and treatment mechanisms for patients with episodic or chronic migraine?

Appendix B: Rankings of Research Questions on Osteoarthritis

1. What are effective ways (e.g., checklist of functionality/symptoms) for patients or providers to determine the need for the transition from nonsurgical to surgical interventions for osteoarthritis (OA)?
2. What are the comparative safety and effectiveness of strategies for identifying and engaging patients early in the OA disease process, particularly fostering healthy behaviors (physical activity, weight management) to prevent progression and disability from OA?
3. What are the comparative safety and effectiveness of different usual-care nonsurgical therapies (pharmacotherapy, injections, physical therapy/exercise, weight loss) or combinations of different usual care nonsurgical therapies to prevent progression and disability from OA? Are these effects maintained (i.e., long-term outcomes)?
4. How do we best set up patients to succeed with nonsurgical management for OA incorporating available options and their specific potential barriers for an individual patient?
5. Do the comparative safety and effectiveness of nonsurgical management strategies to prevent progression and disability from OA differ by sociodemographic differences (e.g., age, sex, race/ethnicity, socioeconomic status [SES], insurance status, access to health care, physical demands of occupation)? How do these strategies differ in specific underrepresented patient populations (i.e., those with low literacy level, low SES, or less healthcare access)?
6. What are the optimal duration, intensity, and frequency of examined nonsurgical interventions for OA to create sustained changes in patient-centered outcomes?
7. What are the most important patient-centered outcomes (e.g., sleep, negative affect/depression/worry, delay to surgery, reduction in medications, pain/independence in activities of daily life/instrumental activities of daily life, patient satisfaction, time to return to work/activities or other employment outcomes, quality of life, reliability of pain treatment) for patients with foot, ankle, knee, or hip OA?
8. What opportunities for promoting coordinated, proactive, longitudinal, chronic care for OA are now available in today's new healthcare delivery system?
9. What are the comparative safety and effectiveness of strategies to help patients engage in key self-management behaviors for managing OA (physical activity, weight management) in real-world settings (community, primary care)?
10. Are there potential standardized screening tools and indicators of OA that can improve early diagnosis of OA?
11. What are the comparative safety and effectiveness of biomechanical strategies to improve OA symptoms and slow progression of disease?
12. What are the comparative safety and effectiveness of strategies promoting long-term behavior change (e.g., weight management, physical activity) in the context of chronic pain and functional limitations associated with OA?