Effective Health Care

Antinuclear Autoantibody and Rheumatoid Factor Testing in Children Nomination Summary Document

Results of Topic Selection Process & Next Steps

- Antinuclear autoantibody and rheumatoid factor testing in children will move forward to be refined as an effectiveness review via the AHRQ Evidence-based Practice Center (EPC) Program. The scope of this topic, including populations, interventions, comparators, and outcomes, will be further developed during the process of the review.

- When key questions have been drafted, they will be posted on the AHRQ Web site. To sign up for notification when this and other EPC Program topics are posted, please go to https://subscriptions.ahrq.gov/service/multi_subscribe.html?code=USAHRQ.

Topic Description

Nominator: Health care professional association

Nomination Summary: The nominator is interested in the diagnostic accuracy of antinuclear antibody (ANA) and rheumatoid factor (RF) testing in children < 18 years of age and the evidence regarding demographic or clinical factors that may modify accuracy or benefits and harms associated with obtaining ANA and RF testing.

Key Questions from Nominator:

1. What are the incidences and prevalences of non-inflammatory pain syndromes (e.g., benign hypermobility syndrome, patellofemoral stress syndrome, fibromyalgia, and growing pain) in children and adolescents?
2. What is the natural history of non-inflammatory pain syndromes in children and adolescents?
3. **a)** What is the diagnostic accuracy of antinuclear antibody (ANA) and rheumatoid factor (RF) for children < 18 years of age? With respect to the following conditions (including but not limited to):
   - Juvenile idiopathic arthritis/Juvenile rheumatoid arthritis
   - Systemic lupus erythematosus
   - Non-inflammatory pain syndromes (e.g., fibromyalgia, patellofemoral stress syndrome, benign hypermotility syndrome, growing pains)
   - Others?

   b) What is the evidence that demographic and clinical factors modify accuracy?
   - Gender
   - Children with signs/symptoms of synovitis versus children with vague musculoskeletal complaints
   - Age
   - Race/ethnicity

Accuracy can include:

- Sensitivity
- Specificity
- PPV
- NPV

4. What are the benefits and harms associated with obtaining ANA and RF for the conditions listed?
   Outcomes (including but not limited to):
   - Patient referrals (i.e., to pediatric rheumatologists)
   - Additional diagnostic testing (e.g., radiologic studies, laboratory testing, etc.)
   - Treatment
   - Psychological (anxiety)

Considerations

- The topic meets all EHC Program selection criteria. (For more information, see http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/.)

- Musculoskeletal pain during childhood is common, can be difficult for children to characterize, and can cause children and parents great anxiety. Musculoskeletal disorders have multiple etiologies, and the history and physical examination greatly aid in narrowing the differential diagnosis. Laboratory and radiological studies may help to support a diagnosis in a child with a high likelihood of inflammatory musculoskeletal illness and may exclude worrisome diagnoses such as infection and malignancy.

- Although immunologic laboratory tests can have great utility in the diagnosis and management of patients with rheumatic diseases, they can be misused. The practice of overuse of these tests can escalate the economic and social burden of medical care through their high rate of false positive test results, resulting in further testing and consultation, in addition to anxiety for the patient and family. The nominator has expressed interest in the diagnostic accuracy of the ANA and RF tests in children.

- In addition, because these tests are known to have a low predictive value in this population, a question that must be addressed in a report on this topic is, "For which patients is this testing appropriate?" Because these tests are used as prognostic indicators, information on the prognostic significance of the tests may also be helpful to include in a report.

- Because of the volume and type of literature available on this topic, it appears that a review may be able to address the nominator's questions.