

DIAGNOSTIC TEST

Diagnosis of foot osteomyelitis

Objectives:

By the end of this module, the participant will be able to critically appraise an article about a diagnostic test. Specifically, the participant will be able to:

- assess the internal validity of an article about a diagnostic test
- calculate and interpret likelihood ratios (LR)
- determine the applicability of a diagnostic test to patient care.

Assignment:

1. read the clinical scenario
2. compose a well-built clinical question about the diagnostic problem
3. complete a literature search using the headings from your clinical question and bring the results of your search to the session
4. read the Users' Guides to the Medical Literature reference articles (see below)
5. complete the Users' Guides to the Medical Literature worksheet
6. determine the applicability of this diagnostic test to the care of the patient in the clinical scenario

Clinical Scenario:

You are a hospital-based general internist caring for a 95 year old retired retail sales clerk and mother of 4 children. She has had a diabetic foot infection for several weeks with purulent drainage from an ulcer in the web space between her 2nd and 3rd toe. The plantar aspect of her foot in the area of the 2nd metatarsal head is erythematous, swollen and tender. She has had trouble walking as a result. Before admission, she had been on oral amoxicillin/clavulanic acid for 10 days with no improvement.

She is afebrile, has a normal leukocyte count, and has a plain x-ray of the foot showing no bony abnormalities. However, her erythrocyte sedimentation rate (ESR) is modestly elevated and because of the appearance of her foot and the lack of clinical improvement you are worried about the possibility of underlying osteomyelitis.

You are about to request a technetium bone scan (the local practice pattern your hospital) but remember hearing from colleagues over time that magnetic resonance imaging (MRI) is a much better diagnostic test for osteomyelitis.

You wonder if you really should request the bone scan so you do a quick literature search online and find an article by Croll *et al* (see attached) that looks pertinent.

Enclosed Materials:

1. Croll SD, Nicholas GG, Osborne MA, Wasser TE, Jones S. Role of magnetic resonance imaging in the diagnosis of osteomyelitis in diabetic foot infections. *J Vasc Surg* 1996;24:266-70.
2. Guyatt G, Drummond R. *Users' Guides to the Medical Literature: A Manual for Evidence Based Clinical Practice*, 3rd Edition (JAMA). New York: McGraw Hill, 2015. 18. Diagnostic Tests.
3. Critical appraisal form for diagnostic tests.