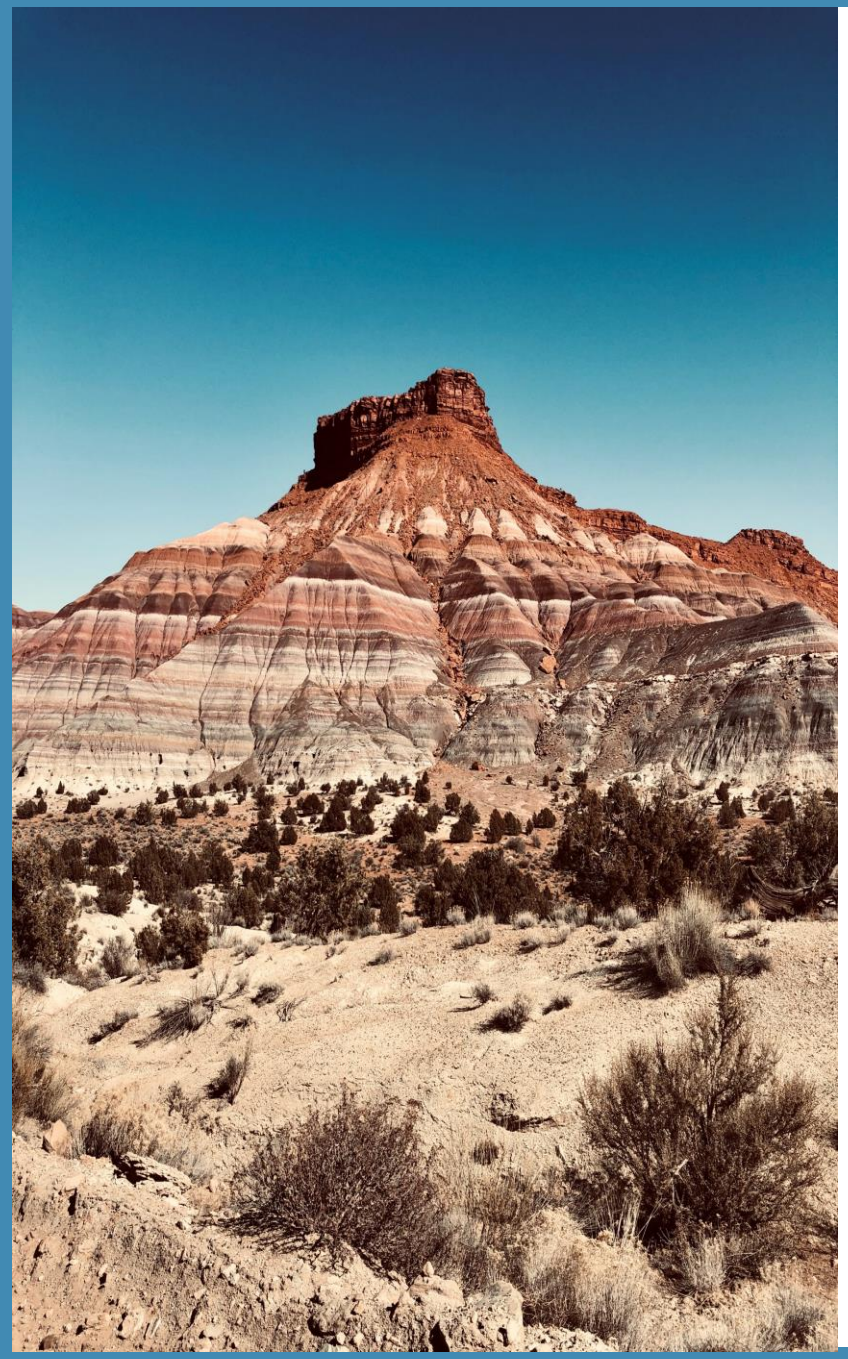
How do I effectively help persons with Rheumatoid Arthritis?

Benjamin J Smith, DMSc, PA-C, DFAAPA

Florida State University

College of Medicine

School of Physician Assistant Practice



Disclosures

Nothing to disclose

Objectives

After completing this session, attendees will be able to:

- **utilize the latest diagnostic approaches when evaluating persons with rheumatoid arthritis**
- **identify the currently approved medications for rheumatoid arthritis.**
- **describe the risks, benefits and expectations of biologics in treating rheumatoid arthritis.**

References

- Singh JA, Saag KG, Bridges Jr SL, Aki EA, Bannuru RR, Sullivan MC, et al. 2015 American College of Rheumatology Guideline for the Treatment of Rheumatoid Arthritis. *Arthritis Care Res*. 2016; 68: 1-25.
- Solomon DH, Fraenkel L, Lu B, Brown E, Tsao P, Losina E, et al. A comparison of care provided in practices with nurse practitioners and physician assistants versus sub-specialist physicians only: a cohort study of rheumatoid arthritis. *Arthritis Care Res*. 2015;66(67):1664-1670.
- Smolen JS, Landewe R, Bijlsma J, et al EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying anti rheumatic drugs: 2016 update. *Annals of the Rheumatic Diseases*. 2017;76:960-977.
- Smith BJ, Nuccio BC, Graves KY, and McMillan VM. Screening and Work-up Requirements Prior to Beginning Biologic Medications for Dermatologic and Rheumatic Diseases. *J Am Acad Physician Assist*. 2018; 31(6): 23-28.

Question 1

In the 2010 ACR/EULAR Classification Criteria for rheumatoid arthritis, which of the following is included as a variable in the criteria?

a. Rheumatoid nodules

b. Erosive changes on radiograph

c. Morning stiffness greater than 1 hour

d. Elevated erythrocyte sedimentation rate

Question 2

Which of the following can be considered an extra-articular manifestation of rheumatoid arthritis?

a. Discoid rash

b. Keratoconjunctivitis sicca

c. Tophi

d. Enthesitis

Question 3

Which of the following is recommended prior to initiating a biologic medication for rheumatoid arthritis?

a. Magnetic resonance imaging of the small joints of the hands

b. Epstein-Barr Virus titers

c. Tuberculosis screening by ppd or serum screening test

d. Synovial biopsy of most symptomatic joint

In the arthritis which generally shows itself about the age of thirty-five there is frequently no great interval between the affection of the hands and feet; both these becoming similar in nature, slender, with little flesh…For the most part their arthritis passeth from the feet to the hands, next the elbows and knees, after these the hip joint. It is incredible how fast the mischief spreads.

Hippocrates

Copeman WSC. A Short History of Gout. Berkeley and Los Angeles: University of California Press; 1964.

…[when some] undifferentiated morbid condition is first described, the characters of which are so striking that it seems well-nigh impossible that they should have been long overlooked it is often suggested that the malady is one of recent development, a new disease which owes its origin to some alteration in the conditions of life…in the case of the disease now to be considered, there is no room for suggestions of this kind, for the evidence of its antiquity is derived, not from mere written descriptions, but from the impress which it has left upon the bones of its victims…

Archibald Garrod

Treatise on Rheumatism and Rheumatoid Arthritis (1890)

Garrod AE. A Treatise on Rheumatism and Rheumatoid Arthritis. London: Charles Griffin and Company; 1890.

Case

37 y.o. ♀ nurse with 6 month hx of RF/CCP+ RA on MTX 20mg po q week X 3 months with breakthrough sxs including arthralgia and synovitis. Has erosions on hands/wrists and feet x-rays.

PMH---s/p TAH/BSO

+ PPD X 5yrs, -CXR, no prior treatment

No other meds except MTX/Folic Acid

WHAT DIAGNOSIS AM I TO CONSIDER FOR THIS PERSON WITH JOINT PAIN?

Reprinted from
ARTHRITIS AND RHEUMATISM
Vol. 31, No. 3, March 1988

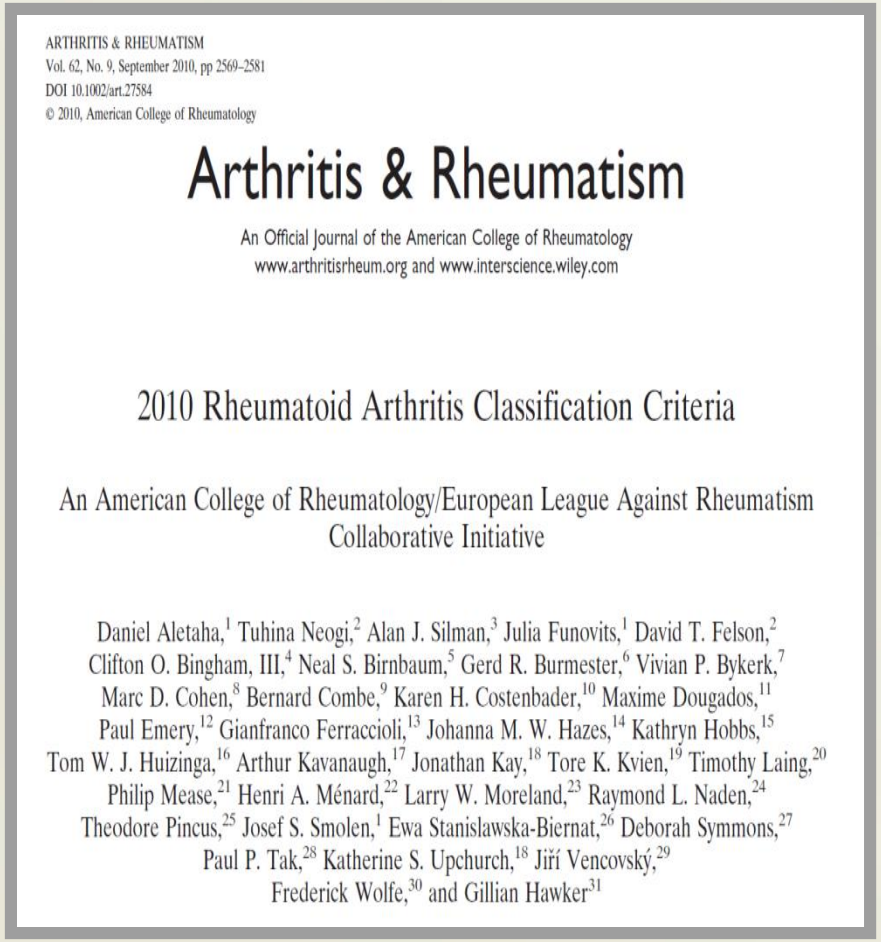
THE AMERICAN RHEUMATISM ASSOCIATION 1987 REVISED CRITERIA FOR THE CLASSIFICATION OF RHEUMATOID ARTHRITIS

FRANK C. ARNETT, STEVEN M. EDWORTHY, DANIEL A. BLOCH, DENNIS J. McSHANE, JAMES F. FRIES, NORMAN S. COOPER, LOUIS A. HEALEY, STEPHEN R. KAPLAN, MATTHEW H. LIANG, HARVINDER S. LUTHRA, THOMAS A. MEDSGER, Jr., DONALD M. MITCHELL, DAVID H. NEUSTADT, ROBERT S. PINALS, JANE G. SCHALLER, JOHN T. SHARP, RONALD L. WILDER, and GENE G. HUNDER

*Morning stiffness lasting at least 1 hour
*Arthritis of three or more joint areas
*Arthritis of hand joints
*Symmetric arthritis
*Rheumatoid nodules
*Serum rheumatoid factor
*Radiographic changes

4/7 criteria present (first four listed for at least 6 weeks)

Published in the September 2010 Issues of *A&R* and *ARD*



ARTHRITIS & RHEUMATISM
Vol. 62, No. 9, September 2010, pp 2569–2581
DOI 10.1002/art.27584

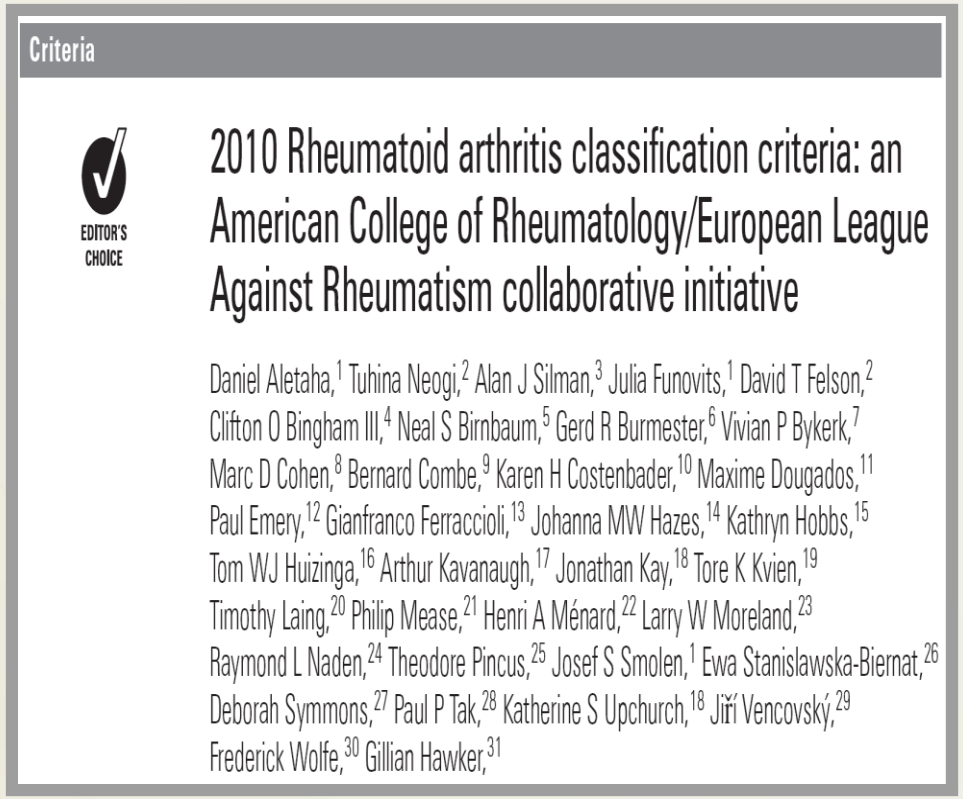
Arthritis & Rheumatism

An Official Journal of the American College of Rheumatology
www.arthritisrheum.org and www.interscience.wiley.com

2010 Rheumatoid Arthritis Classification Criteria

An American College of Rheumatology/European League Against Rheumatism Collaborative Initiative

Daniel Aletaha,[1] Tuhina Neogi,[2] Alan J. Silman,[3] Julia Funovits,[1] David T. Felson,[2] Clifton O. Bingham, III,[4] Neal S. Birnbaum,[5] Gerd R. Burmester,[6] Vivian P. Bykerk,[7] Marc D. Cohen,[8] Bernard Combe,[9] Karen H. Costenbader,[10] Maxime Dougados,[11] Paul Emery,[12] Gianfranco Ferraccioli,[13] Johanna M. W. Hazes,[14] Kathryn Hobbs,[15] Tom W. J. Huizinga,[16] Arthur Kavanaugh,[17] Jonathan Kay,[18] Tore K. Kvien,[19] Timothy Laing,[20] Philip Mease,[21] Henri A. Ménard,[22] Larry W. Moreland,[23] Raymond L. Naden,[24] Theodore Pincus,[25] Josef S. Smolen,[1] Ewa Stanislawska-Biernat,[26] Deborah Symmons,[27] Paul P. Tak,[28] Katherine S. Upchurch,[18] Jiří Vencovský,[29] Frederick Wolfe,[30] and Gillian Hawker[31]



Criteria

EDITOR'S CHOICE

2010 Rheumatoid arthritis classification criteria: an American College of Rheumatology/European League Against Rheumatism collaborative initiative

Daniel Aletaha,[1] Tuhina Neogi,[2] Alan J Silman,[3] Julia Funovits,[1] David T Felson,[2] Clifton O Bingham III,[4] Neal S Birnbaum,[5] Gerd R Burmester,[6] Vivian P Bykerk,[7] Marc D Cohen,[8] Bernard Combe,[9] Karen H Costenbader,[10] Maxime Dougados,[11] Paul Emery,[12] Gianfranco Ferraccioli,[13] Johanna MW Hazes,[14] Kathryn Hobbs,[15] Tom WJ Huizinga,[16] Arthur Kavanaugh,[17] Jonathan Kay,[18] Tore K Kvien,[19] Timothy Laing,[20] Philip Mease,[21] Henri A Ménard,[22] Larry W Moreland,[23] Raymond L Naden,[24] Theodore Pincus,[25] Josef S Smolen,[1] Ewa Stanislawska-Biernat,[26] Deborah Symmons,[27] Paul P Tak,[28] Katherine S Upchurch,[18] Jiří Vencovský,[29] Frederick Wolfe,[30] Gillian Hawker,[31]

AMERICAN COLLEGE OF RHEUMATOLOGY
EDUCATION • TREATMENT • RESEARCH

eular

Target Population of the Criteria

Two requirements:

(1) Patient with at least one joint with definite clinical synovitis (swelling)

(2) Synovitis is not better explained by "another disease"

Differential diagnoses differ in patients with different presentations.

If unclear about the relevant differentials, an expert rheumatologist should be consulted.

2010 ACR/EULAR Classification Criteria for RA

JOINT DISTRIBUTION (0-5)	
1 large joint	0
2-10 large joints	1
1-3 small joints (large joints not counted)	2
4-10 small joints (large joints not counted)	3
>10 joints (at least one small joint)	5
SEROLOGY (0-3)	
Negative RF AND negative ACPA	0
Low positive RF OR low positive ACPA	2
High positive RF OR high positive ACPA	3
SYMPTOM DURATION (0-1)	
<6 weeks	0
≥6 weeks	1
ACUTE PHASE REACTANTS (0-1)	
Normal CRP AND normal ESR	0
Abnormal CRP OR abnormal ESR	1

≥6 = definite RA

What if the score is <6?

Patient might fulfill the criteria…

→ **Prospectively** over time (cumulatively)

→ **Retrospectively** if data on all four domains have been adequately recorded in the past

American College of Rheumatology
Education • Treatment • Research

eular

EXTRA-ARTICULAR MANIFESTATIONS OF RHEUMATOID ARTHRITIS

Skin	Nodules, fragility, vasculitis, pyoderma gangrenosum
Heart	Pericarditis, premature atherosclerosis, vasculitis, valve disease, and valve ring nodules
Lung	Pleural effusions, interstitial lung disease, bronchiolitis obliterans, rheumatoid nodules, vasculitis
Eye	Keratoconjunctivitis sicca, episcleritis, scleritis, scleromalacia perforans, peripheral ulcerative keratopathy
Neurologic	Entrapment neuropathy, cervical myelopathy, mononeuritis multiplex (vasculitis), peripheral neuropathy
Hematopoietic	Anemia, thrombocytosis, lymphadenopathy, Felty's syndrome
Kidney	Amyloidosis, vasculitis
Bone	Osteopenia

RA, splenomegaly, and neutropenia. This complication is seen in patients with severe, RF/ACPA-positive disease and may be accompanied by hepatomegaly, thrombocytopenia, lymphadenopathy, and fevers

Rheumatoid Nodules

Rheumatoid Factor

- **Autoantibodies directed against Fc portion of IgG (IgM to IgG)**
- **75-90% of RA patients**
- **Result can aid in the diagnosis, but is not diagnostic of RA**
- **RF not used to measure RA disease activity, but higher titers can be associated with disease severity, erosions, extra-articular manifestations, disability**

Rheumatoid Factor in other diseases

CH-Chronic disease
- *hepatic (PBC)
- *pulmonary (IPF, silicosis, asbestosis)

R-Rheumatoid Arthritis

O-Other rheumatic disease
- *SLE
- *Systemic sclerosis
- *MCTD
- *Sjögren's
- *Polymyositis
- *Sarcoid

N-Neoplasm, especially after XRT or chemo

I-Infections
- *AIDS
- *Mononucleosis
- *Parasitic infections
- *Chronic Viral
- *Hepatitis B/C
- *Chronic bacterial (SBE, syphilis, mycobacteria)

C-Cryoglobulienmia (esp with Hep C)

Anti-Cyclic Citrullinated Peptide Antibodies (anti-CCP)

- RA sensitivity 47-76%

  specificity 90-96%

- Can occur in active TB, SLE, Sjogren's, Polymyositis, Dermatomyositis, Scleroderma

- (+) CCP Ab

  more likely to have aggressive disease and progressive radiographic joint damage

Radiographic Studies

X-rays

Ultrasound

Magnetic Resonance Imaging

X-ray Changes in RA

WHAT TREATMENTS MIGHT I CONSIDER FOR THIS PERSON?

Goals of RA treatment

-Relieve pain

-Reduce inflammation

-Protect articular structures

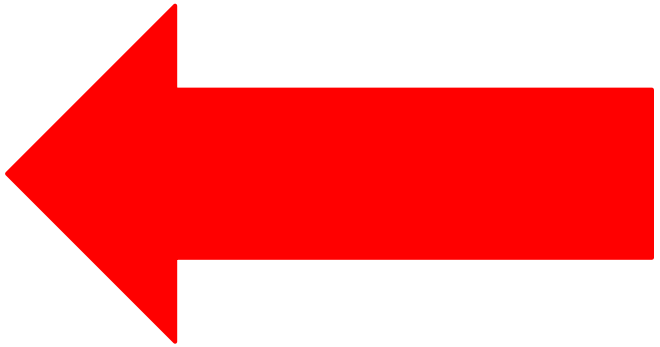
-Maintain function

-Control systemic involvement

Ruderman, Eric M., MD, Editorial Consultant. Management of Rheumatic Diseases in the Biologic Era. Coalition of Rheumatology Educators; 2008

Pharmacologic Therapy

- Nonsteroidal Anti-inflammatory Drugs
- Corticosteroids
- Hydroxychloroquine
- Sulfasalazine
- Methotrexate
- Leflunomide
- Azathioprine
- Cyclosporine



Disease modifying antirheumatic drugs (DMARDs)

Guidelines for use of glucocorticoids in RA

-Avoid use of glucocorticoids without DMARDs

-Prednisone, >10 mg/day, is rarely indicated for articular disease

-Taper to the lowest effective dose

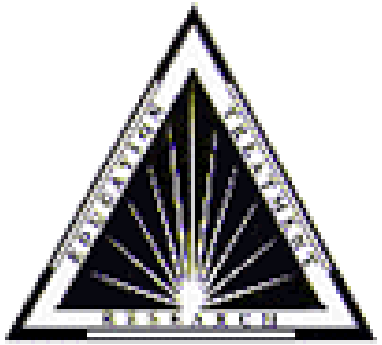
-Use as “bridge therapy” until DMARD therapy is effective

-Remember prophylaxis against osteoporosis

WHAT ABOUT THOSE NEW TREATMENTS THAT I SEE ON TV?

Choosing Wisely®

An initiative of the ABIM Foundation



AMERICAN COLLEGE OF RHEUMATOLOGY

-Don't test ANA sub-serologies without a positive ANA and clinical suspicion of immune-mediated disease.

-Don't test for Lyme disease as a cause of musculoskeletal symptoms without an exposure history and appropriate exam findings.

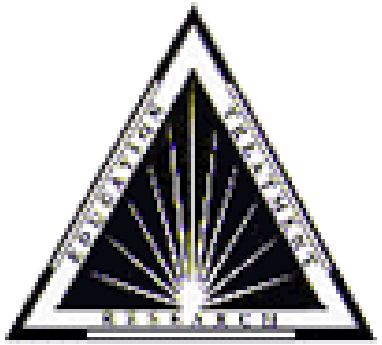
-Don't perform MRI of the peripheral joints to routinely monitor inflammatory arthritis.

- Don't prescribe biologics for rheumatoid arthritis before a trial of methotrexate (or other conventional non-biologic DMARDs).

-Don't routinely repeat DXA scans more often than once every two years.

Choosing Wisely®

An initiative of the ABIM Foundation



AMERICAN COLLEGE OF RHEUMATOLOGY

-Don't test ANA sub-serologies without a positive ANA and clinical suspicion of immune-mediated disease.

-Don't test for Lyme disease as a cause of musculoskeletal symptoms without an exposure history and appropriate exam findings.

-Don't perform MRI of the peripheral joints to routinely monitor inflammatory arthritis.

- Don't prescribe biologics for rheumatoid arthritis before a trial of methotrexate (or other conventional non-biologic DMARDs).

-Don't routinely repeat DXA scans more often than once every two years.

Biologics/Small Molecules

-Tumor Necrosis Factor-ά antagonists

Adalimumab (Humira)-SQ

Certolizumab (Cimzia)-SQ

Etanercept (Enbrel)-SQ

Golimumab (Simponi, Simponi Aria)-SQ, IV

Infliximab (Remicade)-IV

-Interleukin-1 receptor antagonist (IL-1)

Anakinra (Kineret)-SQ

-B cells

Rituximab (Rituxan)-IV

-T cells

Abatacept (Orencia)-SQ, IV

-Interleukin-6 receptor (IL-6R)

Tocilizumab (Actemra) SQ, IV

Sarilumab (Kevzara)-SQ

-Janus Kinase (JAK) inhibitor

Tofacitinib (Xeljanz)-PO

Baricitinib (Olumiant)-PO

My Pre-Drug Questions

-Current/recurrent infxns

-Cancer (CA)

-Congestive Heart Failure (CHF)

-Chronic Obstructive Pulmonary Disease (COPD)/asthma

-Tuberculosis (TB)

***PPD hx**

***exposure**

-Multiple Sclerosis (MS)

-Hepatitis B/C

-Hyperlipidemia

Biologics/Small Molecules

Potential risks

- Injection site/infusion reaction
- Infection risk (bacterial, TB/other granulomatous, opportunistic)
- Malignancy risk ?
- Demyelinating Disease, MS or Family Hx
- Heart failure
- Drug induced syndromes (ANA, dsDNA)
- Cytopenias
- Gastrointestinal perforation

Biologics/Small Molecules

Pre-drug screening

-CXR

-PPD/Interferon-gamma release assays (IGRAs)

-Pneumonia vaccine

-Influenza vaccine

-Hepatitis B and C serolog

What about the COVID vaccination?

COVID-19 vaccination in Rheumatic and Musculoskeletal Disease Patients

General considerations

- Engage in shared decision making regarding vaccination
- Recognize heterogeneity of COVID-19 and higher risk for hospitalized COVID-19 and worse outcomes compared to the general population
- Should be prioritized for vaccination before the nonprioritized general population of similar age and sex
- No additional contraindications to vaccinations
- Vaccination response blunted in its magnitude and duration for those on immunomodulatory therapies compared to general population
- Theoretic risk of disease flare or worsening, but outweighed by risk

https://www.rheumatology.org/Portals/0/Files/COVID-19-Vaccine-Clinical-Guidance-Rheumatic-Diseases-Summary.pdf

Arthritis Care & Research
Vol. 68, No. 1, January 2016, pp 1–25
DOI 10.1002/acr.22783

SPECIAL ARTICLE

2015 American College of Rheumatology Guideline for the Treatment of Rheumatoid Arthritis

JASVINDER A. SINGH,[1] KENNETH G. SAAG,[1] S. LOUIS BRIDGES JR.,[1] ELIE A. AKL,[2] RAVEENDHARA R. BANNURU,[3] MATTHEW C. SULLIVAN,[3] ELIZAVETA VAYSBROT,[3] CHRISTINE MCNAUGHTON,[3] MIKALA OSANI,[3] ROBERT H. SHMERLING,[4] JEFFREY R. CURTIS,[1] DANIEL E. FURST,[5] DEBORAH PARKS,[6] ARTHUR KAVANAUGH,[7] JAMES O'DELL,[8] CHARLES KING,[9] AMYE LEONG,[10] ERIC L. MATTESON,[11] JOHN T. SCHOUSBOE,[12] BARBARA DREVLOW,[13] SETH GINSBERG,[14] JAMES GROBER,[13] E. WILLIAM ST.CLAIR,[15] ELIZABETH TINDALL,[16] AMY S. MILLER,[17] AND TIMOTHY MCALINDON[3]

Recommendations for the Use of Vaccines in RA patients on DMARD and/or biologic therapy biologic therapy

-In early or established RA patients aged 50 and over, we conditionally recommend giving the herpes zoster vaccine before the patient receives biologic therapy or tofacitinib for their RA.

-In early or established RA patients who are currently receiving biologics, we conditionally recommend that live attenuated vaccines such as the herpes zoster (shingles) vaccine not be given.

-In patients with early or established RA who are currently receiving biologics, we strongly recommend using appropriately indicated killed/inactivated vaccines

When to Refer

Uncertain diagnosis

Confusing Lab Results

Uncomfortable with DMARDS or Biologic Use

Patient not responding

Erosions or other radiographic changes

Side effects

Question 1

In the 2010 ACR/EULAR Classification Criteria for rheumatoid arthritis, which of the following is included as a variable in the criteria?

a. Rheumatoid nodules

b. Erosive changes on radiograph

c. Morning stiffness greater than 1 hour

d. Elevated erythrocyte sedimentation rate

Question 1

In the 2010 ACR/EULAR Classification Criteria for rheumatoid arthritis, which of the following is included as a variable in the criteria?

a. Rheumatoid nodules

b. Erosive changes on radiograph

c. Morning stiffness greater than 1 hour

d. Elevated erythrocyte sedimentation rate

Question 2

Which of the following can be considered an extra-articular manifestation of rheumatoid arthritis?

a. Discoid rash

b. Keratoconjunctivitis sicca

c. Tophi

d. Enthesitis

Question 2

Which of the following can be considered an extra-articular manifestation of rheumatoid arthritis?

a. Discoid rash

b. Keratoconjunctivitis sicca

c. Tophi

d. Enthesitis

Question 3

Which of the following is recommended prior to initiating a biologic medication for rheumatoid arthritis?

a. Magnetic resonance imaging of the small joints of the hands

b. Epstein-Barr Virus titers

c. Tuberculosis screening by ppd or serum screening test

d. Synovial biopsy of most symptomatic joint

Question 3

Which of the following is recommended prior to initiating a biologic medication for rheumatoid arthritis?

a. Magnetic resonance imaging of the small joints of the hands

b. Epstein-Barr Virus titers

c. Tuberculosis screening by ppd or serum screening test

d. Synovial biopsy of most symptomatic joint

Lessons for Practice

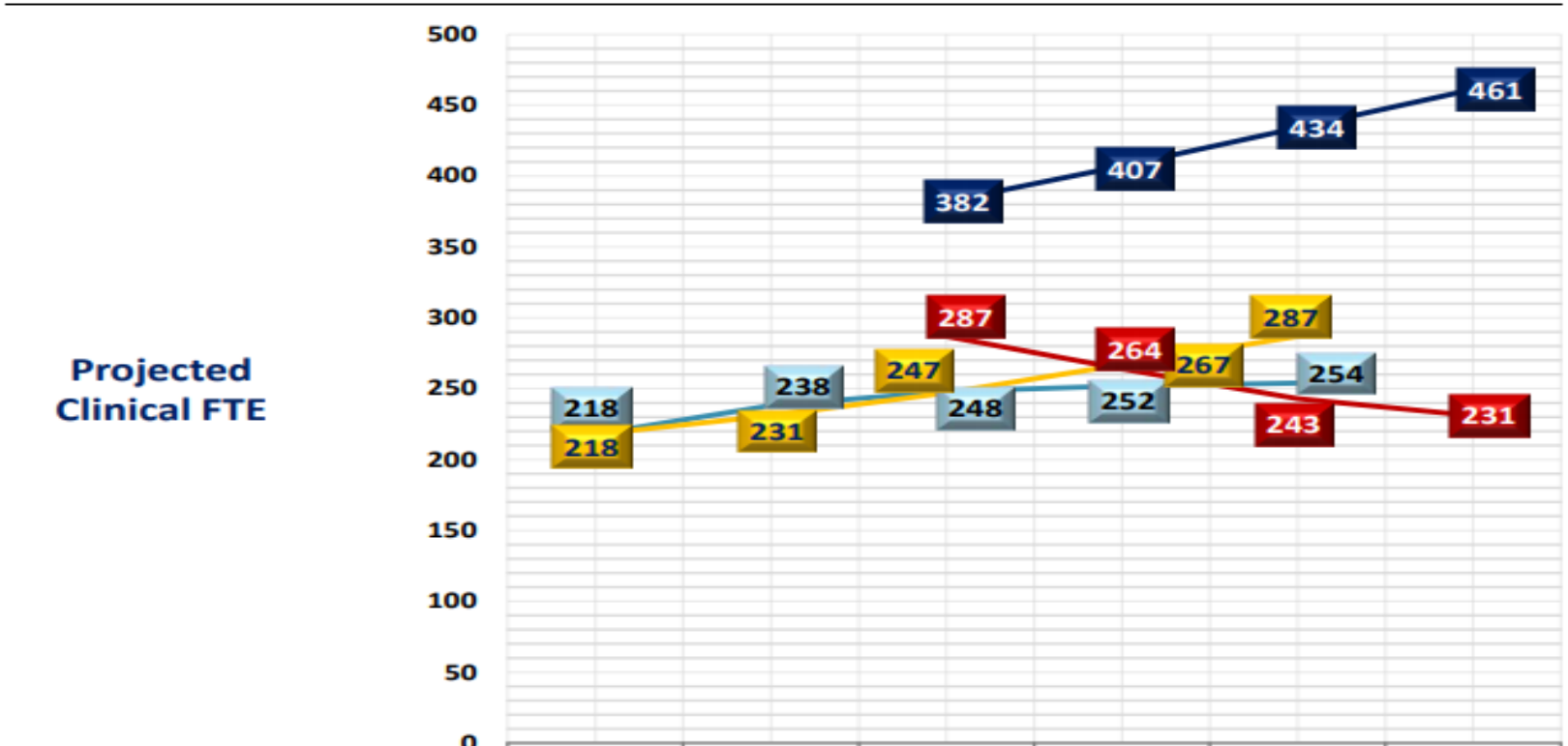
-Rheumatoid Arthritis is a systemic, inflammatory condition. Generally, early diagnosis lends itself to a better prognosis.

-There are multiple pharmacologic treatment options to care for those with rheumatoid arthritis.

-Biologic DMARDS require a thorough prescreening process and appropriate, ongoing monitoring while taking these powerful medications.

Figure 2. Comparison of Projected Supply and Demand of Adult Rheumatology Workforce

2015 Workforce Study of Rheumatology Specialists in the United States: Final Report
http://www.rheumatology.org/portals/0/files/ACR-Workforce-Study-2015.pdf



	2005	2010	2015	2020	2025	2030
2005 Projected Supply	218	238	248	252	254	
2005 Projected Demand	218	231	247	267	287	
2015 Projected Supply			287	264	243	231
2015 Projected Demand			382	407	434	461

Figure E-7. Comparison of Projected Supply and Projected Demand of Pediatric Rheumatologists

Note. Data from 2005 workforce study (2005 to 2025); Data from the 2015 workforce study (2015 to 2030).

2015 Workforce Study of Rheumatology Specialists in the United States: Final Report
http://www.rheumatology.org/portals/0/files/ACR-Workforce-Study-2015.pdf