

Rheumatology Curriculum

Goal

Rheumatology and non-operative (office) orthopedics deal with the prevention, diagnosis, and management of a broad range of musculoskeletal disorders that also often present as complex multi-system disorders. These disorders include crystalline diseases, systemic rheumatic diseases, spondyloarthropathies, vasculitis, inflammatory muscle disease, osteoporosis, osteoarthritis, recreational and sports injury, and soft-tissue diseases and trauma. The goal of rheumatology is early diagnosis and treatment of these conditions to prevent disability and death and improve quality of life.

Rotation on the medical ward services and in general medicine and rheumatology clinic will provide training for the resident to (1) elicit pertinent historical details relevant to the diagnosis of rheumatologic disease, (2) recognize complex patterns of multi-system dysfunction as a manifestation of rheumatologic disease, (3) treat a broad spectrum of rheumatologic problems common in the inpatient and outpatient setting, (4) become proficient in the initial management of rheumatologic diseases, including joint and bursae aspiration and injection, (5) become proficient in monitoring the effects of anti-inflammatory, immunosuppressive, and cytotoxic drugs, (6) understand the social impact of chronic debilitating diseases and the contribution of chronic illness behavior to these problems, and (7) gain exposure to physical and occupational therapy as well as home health resources useful in the treatment of patients with chronic disease.

Objectives

Patient Care

- I. Provide patient care that is compassionate, appropriate and effective for the prevention and treatment of rheumatologic disorders.

Medical Knowledge

- I. Develop the knowledge and skills to obtain an appropriate history for rheumatologic disease, including signs of systemic inflammation (fever, sweats, weight loss, fatigue, and stiffness), weakness or impaired movement, and family history of autoimmune disease.
- II. Develop the knowledge and skills for performing and interpreting physical exam findings on patients with suspected rheumatologic disease, including skin inspection, funduscopic exam, joint and spine exam.
 - a. Recognize joint erythema, swelling, warmth, subluxation, tenderness, crepitus and limitation in range of motion.
 - b. Recognize vasculitis skin rash.
 - c. Recognize mononeuritis multiplex and entrapment neuropathies.
- III. Develop an approach to patients presenting the following symptoms or signs:

- a. arthralgias
 - b. cold fingers/toes
 - c. FUO, and systemic complaints in the setting of fever e.g. headache, visual change, abdominal pain, back pain, joint pain, etc.
 - d. hematuria
 - e. joint pain/swelling
 - f. myalgias
 - g. oral or genital ulcers
 - h. photosensitivity
 - i. pleuritic chest pain
 - j. rash
 - k. regional pain of neck, shoulder, back, hip, knees, wrists or hands
 - l. weakness
 - m. hematologic abnormalities (low white blood cell, red blood cell or platelet count)
 - n. (+) autoantibody tests
- IV. Recognize symptoms and signs, differential diagnosis and management of the following disease processes:
- a. Antiphospholipid Antibody Syndrome
 - b. Behcet's disease
 - c. Carpal tunnel syndrome
 - d. Inflammatory arthritis: crystal-induced arthritis, reactive arthritis, Lyme disease, septic arthritis
 - e. Fibromyalgia
 - f. Mononeuritis Multiplex
 - g. Myositis: Dermatomyositis and Polymyositis
 - h. Osteoarthritis
 - i. Osteoporosis
 - j. Paget's disease
 - k. Polymyalgia Rheumatica
 - l. Raynaud's phenomenon
 - m. Rheumatoid Arthritis
 - n. Scleroderma
 - o. Sjogren's Syndrome
 - p. Sweet's Syndrome
 - q. Systemic Lupus Erythematosus
 - r. Systemic Vasculidities (polyarteritis nodosa, Wegener's granulomatosis, temporal arteritis, Takayasu's arteritis, and cryoglobulinemia)
 - s. Spondyloarthropathies (ankylosing spondylitis, reactive arthritis syndrome, psoriatic arthritis, inflammatory bowel disease-associated arthritis)
- V. Develop knowledge of the following drugs used to treat rheumatologic disorders, including indications, parameters to monitor efficacy, and adverse effects:
- a. nonsteroidal anti-inflammatory drugs (NSAIDs)
 - b. corticosteroids
 - c. antimalarials

- d. sulfasalazine
 - e. gold salts
 - f. antimetabolites (azathioprine, methotrexate, leflunomide, mycophenolate mofetil)
 - g. cytotoxic agents (cyclophosphamide, chlorambucil)
 - h. biologic agents (etanercept, infliximab, anakinra, adalimumab)
 - i. hypouricemic agents (probenecid, allopurinol)
 - j. colchicine
- VI. Understand appropriate use, interpretation and limitations of the following diagnostic studies:
- a. Complete blood count and examination of peripheral smear
 - b. Liver and kidney chemistries
 - c. Muscle enzymes
 - d. Fluorescent treponemal antibodies, RPR and VDRL
 - e. Urinalysis
 - f. Synovial fluid analysis
 - g. Autoantibodies: ANA, Anti-ds DNA, Anti-Sm, anti-RNP, Anti-SS-A, Anti-SS-B, ANCA, Jo-1, Scl-70, rheumatoid factor
 - h. Westergren sedimentation rate
 - i. C-reactive protein
 - j. Uric acid
 - k. Complement components
 - l. Cryoglobulins
 - m. Immunoglobulins by class and subtype
 - n. Muscle biopsy
 - o. Minor salivary gland biopsy
 - p. Sural nerve biopsy
 - q. Bone and joint radiographs
 - r. Joint MRI
 - s. EMG/NCV
 - t. Arthroscopy
- VII. Develop competence in the following procedures:
- a. arthrocentesis
 - b. injection of bursae and joints

Practice-Based Learning and Improvement

- I. Utilize multidisciplinary approach to manage the complex psychosocial needs of patients with disabilities secondary to chronic disease, involving social workers, physical and occupational therapists, nurses, and pharmacists.
 - a. identify home needs and resources to order orthotic and home health aide devices.
- II. Be able to access clinical practice guidelines to help improve patient care.
 - a. www.rheumatology.org/research/guidelines/index.asp
- III. Research specific clinical questions arising from patient care for best evidence-based practice.

- IV. Review patient care errors with attention to changes in systems to prevent recurrence.
- V. Utilize information technology to enhance patient education.

Interpersonal and Communication Skills

- I. Communicate effectively with patients and families in a compassionate, culturally sensitive and patient-centered manner to improve understanding and compliance.
- II. Understand the impact of chronic pain and fatigue on family and workplace.
- III. Ensure charting is legible, thoughtful, complete and timely to facilitate communication within the health care team.

Professionalism

- I. Understand impact of gender, age, culture, religion, and socioeconomic status on patient compliance with therapy.
- II. Understand how to inform patients regarding the natural history of their disease and the risks and benefits of therapeutic interventions to obtain informed consent for procedures and treatments.
- III. Develop a respectful, compassionate approach to counseling patients with chronic debilitating diseases.
- IV. Respect patient confidentiality, particularly with respect to chronic illness and disability issues.
- V. Provide meaningful feedback to colleagues and students regarding performance and behavior.

Systems-Based Practice

- I. Interact with the multidisciplinary team including the social worker, nurse and home nursing agency, pharmacist, therapist and billing coordinator to provide optimal care, particularly in helping patients to maintain independence in activities of daily living.
- II. Apply evidence-based, cost-conscious strategies to prevention, diagnosis and disease management.
- III. Understand the factors involved in the determination of disability.
- IV. Develop skills in identifying opportunities for quality improvement, risk management and cost-effectiveness within a practice.

Teaching Methods

- I. Attending supervision of resident activities in patient care
- II. Teaching rounds
- III. Individual radiology rounds with Rheumatologist and musculoskeletal radiologist to review specific cases.
- III. Conferences
 - Morning report

- Noon conference
- IV. Recommended reading
- V. ACP Clinical Skills Series Videos
 - Sports Medicine Musculoskeletal Exam
 - Arthrocentesis and Joint Injection

Resident Evaluation

- I. Attending feedback to residents on strengths and weaknesses throughout the rotation
- II. Attending written evaluation of residents at the end of the rotation
- III. Mini-CEX bedside evaluation tool

Resources

Kelly's Textbook of Rheumatology

Dieppe and Klippel's Rheumatology

Resnick's Diagnosis of Bone and Joint Disorders

Practical Rheumatology, 1st ed, Mosby, 1995.

Primer of the Rheumatic Diseases

MKSAP

On-line Resources

- UptoDate
- MDConsult
- www.rheumatology.org/research/guidelines/index.asp

Residents should review Annals of Internal Medicine for recent Updates in Rheumatology section as well as ACP journal club for pertinent articles.