

Case Studies in Joint Pain: Review Questions

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QUESTIONS

Choose the single best answer for each question.

- 1. A 32-year-old woman presents with joint pain. She describes diffuse pain throughout her hands, knees, and neck and states that “she aches all over.” She indicates that pain is always present but is worse after activity. She has morning stiffness lasting approximately 1 hour. These symptoms have been present for approximately 3 months. Results of physical examination are normal. A joint examination reveals normal findings, with the exception of numerous symmetric tender points. Which one of the following is the most likely diagnosis in this patient?**

 - Rheumatoid arthritis (RA)
 - Fibromyalgia
 - Polymyositis
 - Polymyalgia rheumatica
 - Hypothyroidism
- 2. Which one of the following is NOT a common therapy administered to treat patients with fibromyalgia?**

 - Nonsteroidal anti-inflammatory drugs (NSAIDs)
 - Tricyclic antidepressants
 - Physical therapy
 - Hydroxychloroquine
- 3. A 34-year-old woman who is a school teacher presents with symptoms of ankle, knee, and wrist pain for 4 weeks. She describes the onset of a maculopapular rash on her chest a few days before her joint symptoms. Which one of the following organisms is most likely responsible for this presentation?**

 - Hepatitis B
 - Human parvovirus B19
 - Chlamydia*
 - Neisseria gonorrhoeae*
 - Streptococcus*
- 4. Which one of the following is NOT an appropriate treatment for patients with osteoarthritis?**

 - Physical therapy
 - One-month trial of rest
 - NSAID therapy
 - Acetaminophen therapy
- 5. Which one of the following statements is TRUE about disease-modifying agents for treatment of RA?**

 - Agents should be initiated when 1 month of NSAID therapy does not control symptoms.
 - Agents should be administered as the drugs of first choice in patients with new-onset RA.
 - Agents should be administered only when radiography shows erosive changes.
- 6. A 52-year-old man presents with a painful right great toe. Pain awoke him from sleep, and he noticed his toe was red and swollen. He has no history of this condition and denies any recent trauma to this toe. His history is pertinent for hypertension for which he recently began taking a diuretic. He does not smoke but admits to binge drinking. On physical examination, he reveals mild distress secondary to pain. His temperature is 100°F, blood pressure is 158/94 mm Hg, pulse is 96 bpm, weight is 240 lb, and height is 5 ft 11 in. He has a reddened face and 1-cm chalky white papules on the helix of his ears. His right first metatarsophalangeal joint is erythematous, swollen, tender, and hot. He cannot flex his toe because of pain. The erythema extends to his ankle, and the ankle joint is tender and warm but does not reveal an effusion. Which one of the following is the most appropriate test to perform?**

 - Serum uric acid level
 - Serologic testing for rheumatoid factor and antinuclear antibody level, erythrocyte sedimentation rate, and complete blood count
 - Radiography of the feet
 - Aspiration of metatarsophalangeal joint fluid
 - Blood culture

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EXPLANATION OF ANSWERS

1. **(B) Fibromyalgia.** Fibromyalgia is a common condition affecting approximately 3 to 6 million people, and 90% of these patients are women.¹ Fibromyalgia is characterized by widespread or diffuse pain with symmetric tender points. No pathologic factors are found on physical examination, and laboratory test results are normal.¹ Fatigue is present in 90% of the affected patients,¹ and tends to relate to lack of prolonged periods of deep restful sleep (stage 4 sleep). The differential diagnosis of patients who present with widespread pain and fatigue should include polymyalgia rheumatica, systemic lupus erythematosus, RA, polymyositis, hypothyroidism, paraneoplastic syndromes, and acute HIV infection. Normal results of physical examination and normal laboratory findings can help to exclude these diagnoses. Fibromyalgia is a common diagnosis in patients presenting with joint pain. Thus, not all "joint pain" described by patients is true joint pain. A complete history and physical examination, with particular attention paid to the joints, help the physician make the proper diagnosis and treatment.
2. **(D) Hydroxychloroquine.** Hydroxychloroquine is NOT a common treatment for fibromyalgia. Treatment of patients with fibromyalgia targets pain and sleep disturbance. NSAIDs are administered to alleviate the pain, which usually waxes and wanes. A physical therapist can help the patient with an appropriate stretching exercise program, which may be helpful. However, activity must be balanced with rest. In treating patients with fibromyalgia, it is important to restore the sleep-wake cycle because the interrupted sleep cycle tends to lower the pain threshold. Treatment includes administration of low-dose tricyclic antidepressant medication, which has pain-modulating and sedative properties.
3. **(B) Human parvovirus B19.** Human parvovirus B19 infection is the agent responsible for the childhood disease known as the *fifth disease*. This infection presents in children with an exanthem known as *erythema infectiosum* or "slapped cheek." In adults, viral exanthem is less common and acute symmetric

arthritis that affects both large and small joints is more common. Joint involvement typically occurs 1 to 6 days after the rash, but it can precede the rash. The arthritis typically improves within 4 weeks after the onset. Some patients can have persistent arthritic symptoms for months to years.

4. **(B) One-month trial of rest.** Bed rest for 1 month only contributes to more loss of muscular strength in a patient with osteoarthritis. Physical therapy is important in strengthening the support structures for the osteoarthritic joints. NSAIDs and acetaminophen are administered widely in the treatment of osteoarthritis.
5. **(A) Agents should be initiated when 1 month of NSAID therapy does not control symptoms.** Radiography changes predict more aggressive disease and warrant a disease-modifying agent. Other predictors of aggressive disease include the number of American College of Rheumatology criteria for rheumatoid arthritis, the number of joints involved, rheumatoid factor seropositivity, and the presence of extra-articular manifestations.
6. **(D) Aspiration of metatarsophalangeal joint fluid.** Synovial fluid analysis is important in patients with these symptoms because acute monoarthritis may be a septic arthritis, which is a true medical emergency. An arthrocentesis is required for diagnosis and treatment. Specific features of synovial fluid and leukocyte count can indicate the diagnosis. Gram's stain is helpful when it reveals organisms; a negative Gram's stain does not exclude a joint infection. Clinical scenario and synovial fluid characteristics must be considered together.

REFERENCE

1. Fan PT, Blanton ME: Clinical features and diagnosis of fibromyalgia. *The Journal of Musculoskeletal Medicine* April 1992:24-42.

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