Mononucleosis In Athletes

See also Epstein Barr Virus Pharyngitis
See also Mononucleosis

Background

1. General information
   - Self limited infection
   - Typically seen in adolescents/ young adults
   - Can delay return to play in athletes
     - Fatigue
     - Fear of splenic rupture

Pathophysiology

1. Etiology
   - Epstein Barr virus (EBV)
     - DNA herpes virus
2. Symptoms
   - Pharyngitis
   - Fatigue
   - Lymphadenopathy
   - Fever
   - Tonsillar edema
   - Transient palatal petechiae
3. Concomitant infection w/Group A Beta-hemolytic Streptococcal pharyngitis (GABHS)
   - Affects between 3-40 % of those with mononucleosis
   - Test all w/rapid strep test
   - If rapid strep test is positive tx appropriately
     - Do not use amoxicillin or ampicillin: may cause rash
4. Potential complications of infectious mononucleosis
   - Pneumonia
   - Seizure
   - Meningoencephalitis
   - Guillain-Barre Syndrome
   - Thrombocytopenia
   - Mild hepatitis

Diagnostics

1. Clinical suspicion may be high
2. Tests to confirm dx/ determine return to play
   - Delayed or serial testing is more accurate
   - IgM heterophile antibody test (Monospot)
     - Done rapidly
     - Either positive or negative
     - Detects transient IgM antibodies
       - Incr between 1st and 3rd wk of infection
       - Decr after 3rd month of infection

        - False-negative in 10-20 % of cases
        - False-positive in 5-15% of cases
    - EBV Capsid Antigen (VCA – Ag) IgM
        - >1:10 signifies acute EBV infection
    - EBV-VCA Ag IgG
        - >1:80 indicates previous infection
    - EBV Nuclear Antigen (EBNA)
        - >1:10 indicates immunity
    - CBC
        - Atypical lymphocytes
        - Lymphocytosis
        - Leukocytosis
    - Liver function tests
        - Associated mild hepatitis common
        - Values 2-3x greater than normal

Differential Diagnosis

1. Streptococcal pharyngitis
2. Adenovirus
3. Herpes virus
4. CMV
5. HIV
6. Rubella
7. Hepatitis A
8. Toxoplasmosis

Therapeutics

1. Symptomatic tx
    - NSAIDs for pain and fever
    - Steroids
        - Studies show no effect on clinical course of illness at 1 and 3 mo
        - Mainly for eminent upper airway obstruction d/t tonsillar hypertrophy
        - Steroids reduce tonsillar inflammation/ edema
        - Consider in mononucleosis induced myocarditis, hepatitis, or neurologic findings (controversial use of steroids)
    - Antibiotics if concurrent Group A Beta hemolytic streptococcus infection

Prognosis

1. Splenic rupture
    - Leading cause of death w/mononucleosis
    - Most important concern for return to play
    - Prevalence
        - Occurs in 0.1-0.2% of cases
        - 30% mortality in this pt group
    - All patients should be considered at risk for splenic rupture b/c clinical severity, labs, and physical exam are not reliable predictors of rupture
    - Most ruptures occur within 4 weeks of symptom onset (SOR:B)
    - Half of ruptures in athletes are atraumatic
    - Only occurs w/splenomegaly

        - Palpation is insensitive
        - May be confirmed w/ultrasound
            - No standards for spleen size on ultrasound
        - Spleens that rupture are typically 2 -3 times larger than normal
        - Presence of splenomegaly does not correlate w/severity of laboratory values
        - 7% of those w/mononucleosis have splenomegaly at presentation
    - Illness severity and splenic rupture susceptibility do not correlate
    - Recommendation:
        - Refrain from vigorous physical activity for at least 4 wks post infectious mononucleosis symptoms (SOR:C)
        - No return to play in first 3 wks
        - May do limited activity in wk 4
        - If other symptoms resolved may return to vigorous activity at wk 5
        - No recommendation for routine use of ultrasound
            - May use selectively
            - Standards variable for normal spleen size
2. Athletes often recover sooner than non-athletes
3. Strict bed rest not needed
    - Promotes deconditioning
4. Light training may begin 3-4 wks after dx
    - Negative liver enzymes
    - Pt ready for return to play, symptoms resolved
5. Usually 4-6 wks to fully regain typical athletic abilities
6. Top athletes may need 3-6 mos to regain prior level of performance

References

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Evidence-based Inquiry

1. Can we prevent splenic rupture for patients with infectious mononucleosis?
2. What test is the best for diagnosing infectious mononucleosis?

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