Determination of Return to Play in Infectious Mononucleosis

Tessa R. Barclay
Return to Play Guidelines: Infectious Mononucleosis

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Family Medicine Clerkship Rotation
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Mentor: Dr.
Infectious Mono + Athletics

- Infectious mono incidence rate among young adults = 1-3%
- Incubation period = 30-50 days
- Symptoms typically begin as fever, malaise, and headache
  - Pharyngitis develops in 80% of those affected
  - Splenomegaly occurs in 50-100%
- Characteristic exam findings:
  - Posterior cervical lymphadenopathy
  - Tonsillar enlargement or exudate
  - Palatal petechiae
  - Splenic enlargement
Splenic Rupture

• Rare complication: occurs in 0.1 – 0.2% of cases
• Can occur spontaneously, or as a result of Valsalva or trauma
• Most cases occur in the first three weeks of illness
  ▫ Cases of splenic rupture have been reported up to 7 weeks following disease onset
• Myths and misconceptions
  ▫ Splenic ultrasound has not been validated to be helpful in the assessment of splenomegaly
    • In a study of baseline splenic size in 631 healthy athletes, 7% met the criteria for splenomegaly
  ▫ Physical exam is unhelpful in determining splenic size
    • Combined palpation and percussion to assess splenomegaly has sensitivity of 46% and specificity of 97%
Public Health Costs

- Splenic rupture is due to trauma in 86% of cases
  - 14% occur spontaneously
- EBV infection associated with development of malignancies later in life including:
  - Nasopharyngeal carcinoma
  - Burkitt lymphoma
    - 85% of Burkitt lymphomas in Africa are EBV positive
  - Hodgkin lymphoma
    - 40% in developed countries and 80% in developing countries are EBV positive
Community Perspective

• On return to play implementation:
  “I follow the following framework. I keep people out of all athletic activities for three weeks from the onset of symptoms. To determine the onset of symptoms I take a careful history to figure out when they started feeling poorly. If there is ambiguity, I err on the more cautious date of onset. After three weeks I allow individuals to return to noncontact sports activities. I hold off on adding contact sports and higher level resistance training until the four-week mark. At four weeks most individuals are back to full unrestricted participation in their sport.”

  Dr. Matthew Lunser
  UVM Team Physician
Community Perspective

• On the ambiguity of date of onset, and the challenges of convincing patients who may already have resumed athletic participation when it was not safe to do so:

“You have to balance textbook physiology with real life pragmatism.”

Wayne Warnkan, MD
CHCB Physician
Intervention and Methodology

- Family physicians are often the first to evaluate athletes with suspected infectious mono, thus clear, universal guidelines for determining return to play are essential
- Intervention: develop pictorial representation of current return to play guidelines for athletes with infectious mono
  - Highlight indications for preventing return to play
  - Acknowledge areas of ambiguity in diagnosis
  - Provide evidence-based recommendations to help prevent unnecessary testing
- Ensure dissemination of information to both physicians and coaches to avoid premature return to play
  - Due to delay in diagnosis, including description of signs and symptoms of infectious mono ensures athletes do not resume activities with possible splenomegaly
Results

- Staged diagram indicating parameters to be met for progressive return to play
  - List of symptoms of infectious mono such that if an athlete presents with these consideration should be given to restricting play
  - Suggestions for decision making when actual timing of infection onset is unclear
- Description of symptoms of splenic rupture indicating immediate emergency evaluation
Evaluation and Effectiveness of Limitations

- Main benefit is in saving provider time
  - Consolidating the information and making it more accessible saves the provider an extensive literature search
  - Incidence of splenic rupture is so low that rupture itself would not be an effective outcome to measure
- Diagnostic ambiguity regarding date of onset of illness will persist, but trend toward assuming shorter length of infection will protect athletes given peak of splenomegaly occurs ~3 weeks post-infection
- Predicted increased patient satisfaction if criteria for return to play is made clear from onset
  - Athlete may still be playing sport at time of diagnosis, thus having clear framework in place can prevent distress over taking leave of absence from activity
Recommendations for Future Interventions

• Serial ultrasounds to measure arc of change of athletes’ spleens during mono infection
  ▫ While studies estimate splenomegaly develops in 50-100% of cases of infectious mono, none have looked at the degree of change from baseline spleen size and time course of regression
  ▫ Current recommendations advise against splenic imaging due to lack of baseline against which to compare
  ▫ This information would be helpful in providing a more accurate window of time in which contact sports should be absolutely avoided

• Development of EBV vaccine
  ▫ Current efforts have been focusing on gp350, which is highly conserved among EBV strains
  ▫ EBV infection linked to development of nasopharyngeal carcinoma and Hodgkin lymphoma, thus a vaccine preventing these outcomes is highly desirable


Interview Consent Form

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview.

Name: Matthew Lundgren 3/2/18

Yes [ ] / No [x]

If not consenting as above; please add the interviewee names here for the department of Family Medicine information only.

Name:______________________________________________

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Wayne Wamback, MD