



### Critical Appraisal (Form A)

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- **What is Your Search question from the case history?**
  - Can we depend on troponin-I as a sensitive and specific marker to diagnose patients having MI? and how does it differ from MBCK?
  
- **Search questions related to the clinical case:**
  - **P = Population** n=215 patients were studied, 37 had acute skeletal muscle injury, 10 had chronic muscle disease, 9 were marathon runners and 159 were chronic dialysis patients.
  
  - **I = Intervention (treatment or investigation)** patients were evaluated clinically, by ECG, and by two-dimensional ECHO. Total creatine kinase was determined spectrophotometrically and cTnI and MBCK were determined with specific monoclonal antibodies.
  
  - **C = Control** marathon runners consisted of four men and five women who participated in the 1991 Twin Cities marathon, Minneapolis, Minn. None had a known cardiac abnormality and each had been running marathons for 5 to 10 years.
  
  - **O = Outcome or results** elevations on cTnI are highly specific for myocardial injury. Use of cTnI should facilitate distinguishing whether elevations of MBCK are due to myocardial or skeletal muscle injury.



- **The title of article**
  - Cardiac Troponin I (A Marker With High Specificity for Cardiac Injury)
- **Name of Journal :** AHA journals
- **Name of Authors :** J.Adams, G. Bodor, V.Roman, J.Delmez, F.Apple, J. Ladenson and A.Jaffe
- **Year of Publication and Pages :** 1993, 6 pages.
  
- **What is the Research Question (PICO)?**
  - Can we depend on cTnI to diagnose MI as determining whether elevations of MBCK reflect skeletal muscle or myocardial damage is difficult.
  
- **Is the title of the paper appropriate and does it highlight the major theme of you PICO question?**
  - Yes
  
- **Is the abstract consistent with the body of the text (Objectives, Designs, Settings, Variables, Data Analysis, results and conclusion)?**
  - Yes
  
- **Objectives and Hypothesis : Are the objectives of the study clearly stated in the introduction and was it appropriate for the research design?**
  - Yes
  
- **What is the study design? (tick the proper design)**
  - Cohort Study (Prospective)



- **What is the study population? How they were selected ?**
  - A total of 215 subjects were studied. 56 patients had muscle injuries while 159 patients have chronic renal failure. They were selected from source of care at Barnes Hospital.
  
- **Is the data collection open label or blinded for researcher ?**
  - Physicians performing the clinical examinations were blinded to results of ECHO and levels of molecular markers.
  
- **Ethical Considerations**
- **Were ethical considerations mentioned in the article?**
  - Yes
  
- **Are the results (data presentation in tables) clear?**
  - Yes
  
- **Discussion and Conclusion?**
- **Did the interpretations of the results and conclusion of the authors fit in with the results presented in the abstract ?**
  - Yes
  
- **Were the objectives of the study clearly accomplished and were they consistent with the discussion?**
  - Yes
  
- **How do the results apply to your clinical practice?**
  - It is important to have a specific marker for diagnosing myocardial infarction as it is an emergency condition in which you need a fast intervention to save patient's life. This study proves that we can depend on cTn1 as a specific marker.



- **Relevance of the paper**
- **Does the PICO research question of the study match PICO of your clinical question?**
  - Yes
  
- **Validity Assessment**
- **Were the patients randomized in the selection ?**
  - Yes
  
- **Was the randomization double or single blinded ?**
  - Single-blinded
  
- **Is the baseline characteristic (age, gender and other risk factors) were similar in the study and the control group of patients?**
  - No
  
- **Were patients in the groups treated equally aside from the experimental intervention?( in term of follow up and intention to treat analysis ( every patients stay in his group as per randomization)**
  - Yes
  
- **Was follow-up completed as planned in the method in both groups?**
  - Yes
  
- **Were the results (outcomes) measured reliably and blindly?**
  - Yes



- **Applicability Assessment**
- **Is the study population relevant to my practice? (Can the results be applied to my patients?)**
  - Yes
  
- **Is the intervention relevant (available feasible and affordable) to my practice?**
  - Yes
  
- **Are all clinical relevant (important) outcomes considered?**
  - Yes
  
- **Are the likely benefits worth the potential harm and costs?**
  - Yes