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Cardiac magnetic resonance assessment of diastolic dysfunction in acute coronary syndrome

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Abstract

Chest pain is an important presenting symptom. However, few cases of chest pain are diagnosed as acute coronary syndrome (ACS) in the acute setting. This results in frequent inappropriate discharge and major delay in treatment for patients with underlying ACS. The conventional methods of assessing ACS, which include electrocardiography and serological markers of infarct, can take time to manifest. Recent studies have investigated more sensitive and specific imaging modalities that can be used. Diastolic dysfunction occurs early following coronary artery occlusion and its detection is useful in confirming the diagnosis, risk stratification, and prognosis post-ACS. Cardiac magnetic resonance provides a single imaging modality for comprehensive evaluation of chest pain in the acute setting. In particular, cardiac magnetic resonance has many imaging techniques that assess diastolic dysfunction post-coronary artery occlusion. Techniques such as measurement of left atrial size, mitral inflow, and mitral annular and pulmonary vein flow velocities with phase-contrast imaging enable general assessment of ventricular diastolic function. More novel imaging techniques, such as T2-weighted imaging for oedema, T1 mapping, and myocardial tagging, allow early determination of regional diastolic dysfunction and oedema. These findings may correspond to specific infarcted arteries that may be used to tailor eventual percutaneous coronary artery intervention.

Keywords

Author Keywords: Acute coronary syndrome; diastolic dysfunction; cardiac magnetic resonance
KeyWords Plus: ACUTE MYOCARDIAL-INFARCTION; PULMONARY VENOUS FLOW; LEFT ATRIAL VOLUME; DOPPLER-ECHOCARDIOGRAPHY; EMERGENCY-DEPARTMENT; PROGNOSTIC-SIGNIFICANCE; POWERFUL PREDICTOR; IMAGING TECHNIQUES; FILLING PRESSURES; MITRAL-VALVE

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1. **Delayed enhancement and T2-weighted cardiovascular magnetic resonance imaging differentiate acute from chronic myocardial infarction** Times Cited: 362
 By: Abdel-Aty, H; Zagrosek, A; Schulz-Menger, J; et al.
 CIRCULATION Volume: 109 Issue: 20 Pages: 2411-2416 Published: MAY 25 2004
2. **2011 ACCF/AHA Focused Update Incorporated Into the ACC/AHA 2007 Guidelines for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction** Times Cited: 272
 By: Anderson, Jeffrey L.; Adams, Cynthia D.; Antman, Elliott M.; et al.
 Group Author(s): 2007 Writing Comm Members; 2011 Writing Grp Members; ACCF AHA Task Force Members
 JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY Volume: 57 Issue: 19 Pages: E215-E367 Published: MAY 10 2011
3. **Atrial dimensions in health and left ventricular disease using cardiovascular magnetic resonance** Times Cited: 34
 By: Anderson, JL; Horne, BD; Pennell, DJ
 JOURNAL OF CARDIOVASCULAR MAGNETIC RESONANCE Volume: 7 Issue: 4 Pages: 671-675 Published: 2005
4. **MR IMAGING OF MOTION WITH SPATIAL MODULATION OF MAGNETIZATION** Times Cited: 846
 By: AXEL, L; DOUGHERTY, L
 RADIOLOGY Volume: 171 Issue: 3 Pages: 841-845 Published: JUN 1989
5. **Evaluation of Mitral Inflow Velocity Profile: Optimal Through Plane Location for Mitral Inflow Assessment with Cardiac Magnetic Resonance** Times Cited: 3
 By: Azarisman, SM; Wong, DT; Richardson, JD; et al.
 Exp Clin Cardiol Volume: 20 Pages: 975-1001 Published: 2014
[\[Show additional data\]](#)
6. **Persistent diastolic dysfunction despite complete systolic functional recovery after reperfused acute myocardial infarction demonstrated by tagged magnetic resonance imaging** Times Cited: 65
 By: Azevedo, CF; Amado, LC; Kraitchman, DL; et al.
 EUROPEAN HEART JOURNAL Volume: 25 Issue: 16 Pages: 1419-1427 Published: AUG 2004
7. **Echocardiographic diastolic dysfunction and magnetic resonance infarct size in healed myocardial infarction treated with primary angioplasty** Times Cited: 8
 By: Barbieri, Andrea; Bursi, Francesca; Politi, Luigi; et al.
 ECHOCARDIOGRAPHY-A JOURNAL OF CARDIOVASCULAR ULTRASOUND AND ALLIED TECHNIQUES Volume: 25 Issue: 6 Pages: 575-583
 Published: JUL 2008
8. **CT imaging of myocardial perfusion: Possibilities and perspectives** Times Cited: 15
 By: Becker, Alexander; Becker, Christoph
 JOURNAL OF NUCLEAR CARDIOLOGY Volume: 20 Issue: 2 Pages: 289-296 Published: APR 2013
9. **Long-term prognostic significance of left atrial volume in acute myocardial infarction** Times Cited: 179
 By: Beinart, R; Boyko, V; Schwammenthal, E; et al.
 JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY Volume: 44 Issue: 2 Pages: 327-334 Published: JUL 21 2004
10. **ACC/AHA guidelines for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction: Executive summary and recommendations - A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on the Management of Patients with Unstable Angina)** Times Cited: 425
 By: Braunwald, E; Antman, EM; Beasley, JW; et al.
 Group Author(s): Amer Coll Cardiology; Amer Heart Assoc Task Force Practi; Comm Management Patients Unstable
 CIRCULATION Volume: 102 Issue: 10 Pages: 1193-1209 Published: SEP 5 2000
11. **Evaluation of Left Ventricular Diastolic Function with Cardiac MR Imaging** Times Cited: 51

By: Caudron, Jerome; Fares, Jeannette; Bauer, Fabrice; et al.
RADIOGRAPHICS Volume: 31 Issue: 1 Pages: 239-U306 Published: JAN-FEB 2011

12. **Clinical blood flow quantification with segmented k-space magnetic resonance phase velocity mapping** Times Cited: 22
By: Chatzimavroudis, GP; Zhang, HS; Halliburton, SS; et al.
JOURNAL OF MAGNETIC RESONANCE IMAGING Volume: 17 Issue: 1 Pages: 65-71 Published: JAN 2003
13. **MR Myocardial Perfusion Imaging** Times Cited: 45
By: Coelho-Filho, Otavio R.; Rickers, Carsten; Kwong, Raymond Y.; et al.
RADIOLOGY Volume: 266 Issue: 3 Pages: 701-715 Published: MAR 2013
14. **Cardiac magnetic resonance with T2-weighted imaging improves detection of patients with acute coronary syndrome in the emergency department** Times Cited: 162
By: Cury, Ricardo C.; Shash, Khalid; Nagurney, John T.; et al.
CIRCULATION Volume: 118 Issue: 8 Pages: 837-844 Published: AUG 19 2008
15. **Diastolic dysfunction: Improved understanding using emerging imaging techniques** Times Cited: 52
By: Daneshvar, Daniel; Wei, Janet; Tolstrup, Kirsten; et al.
AMERICAN HEART JOURNAL Volume: 160 Issue: 3 Pages: 394-404 Published: SEP 2010
16. **Regional diastolic dysfunction in individuals with left ventricular hypertrophy measured by tagged magnetic resonance imaging - The Multi-Ethnic Study of Atherosclerosis (MESA)** Times Cited: 76
By: Edvardsen, T; Rosen, BD; Pan, L; et al.
AMERICAN HEART JOURNAL Volume: 151 Issue: 1 Pages: 109-114 Published: JAN 2006
17. **British Cardiac Society Working Group on the definition of myocardial infarction** Times Cited: 65
By: Fox, KAA; Birkhead, J; Wilcox, R; et al.
HEART Volume: 90 Issue: 6 Pages: 603-609 Published: JUN 2004
18. **The role of cardiovascular imaging techniques in the assessment of patients with acute chest pain** Times Cited: 13
By: Gani, Firoz; Jain, Diwakar; Lahiri, Avijit
NUCLEAR MEDICINE COMMUNICATIONS Volume: 28 Issue: 6 Pages: 441-449 Published: JUN 2007
19. **Quantitative Tracking of Edema, Hemorrhage, and Microvascular Obstruction in Subacute Myocardial Infarction in a Porcine Model by MRI** Times Cited: 55
By: Ghugre, Nilesh R.; Ramanan, Venkat; Pop, Mihaela; et al.
MAGNETIC RESONANCE IN MEDICINE Volume: 66 Issue: 4 Pages: 1129-1141 Published: OCT 2011
20. **ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation** Times Cited: 2,384
By: Hamm, Christian W.; Bassand, Jean-Pierre; Agewall, Stefan; et al.
Group Author(s): ESC
EUROPEAN HEART JOURNAL Volume: 32 Issue: 23 Pages: 2999-3054 Published: DEC 2011
21. **VELOCITY-ENCODED CINE MRI IN THE EVALUATION OF LEFT-VENTRICULAR DIASTOLIC FUNCTION - MEASUREMENT OF MITRAL-VALVE AND PULMONARY VEIN FLOW VELOCITIES AND FLOW VOLUME ACROSS THE MITRAL-VALVE** Times Cited: 91
By: HARTIALA, JJ; MOSTBECK, GH; FOSTER, E; et al.
AMERICAN HEART JOURNAL Volume: 125 Issue: 4 Pages: 1054-1066 Published: APR 1993
22. **NUCLEAR MAGNETIC-RESONANCE IMAGING OF ACUTE MYOCARDIAL-INFARCTION IN DOGS - ALTERATIONS IN MAGNETIC-RELAXATION TIMES** Times Cited: 327
By: HIGGINS, CB; HERFKENS, R; LIPTON, MJ; et al.
AMERICAN JOURNAL OF CARDIOLOGY Volume: 52 Issue: 1 Pages: 184-188 Published: 1983
23. **Noninvasive estimation of left ventricular filling pressure by E/e ' is a powerful predictor of survival after acute myocardial infarction** Times Cited: 341
By: Hillis, GS; Moller, JE; Pellikka, PA; et al.
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY Volume: 43 Issue: 3 Pages: 360-367 Published: FEB 4 2004
24. **A comparison of left ventricular myocardial velocity in diastole measured by magnetic resonance and left ventricular filling measured by Doppler echocardiography** Times Cited: 30

By: Karwatowski, SP; Brecker, SJD; Yang, GZ; et al.
EUROPEAN HEART JOURNAL Volume: 17 Issue: 5 Pages: 795-802 Published: MAY 1996

25. **MITRAL-VALVE FLOW MEASURED WITH CINE MR VELOCITY MAPPING IN PATIENTS WITH ISCHEMIC-HEART-DISEASE - COMPARISON WITH DOPPLER-ECHOCARDIOGRAPHY** Times Cited: 31
By: KARWATOWSKI, SP; BRECKER, SJD; YANG, GZ; et al.
JMRI-JOURNAL OF MAGNETIC RESONANCE IMAGING Volume: 5 Issue: 1 Pages: 89-92 Published: JAN-FEB 1995

26. **ATRIAL CONTRACTION IS AN IMPORTANT DETERMINANT OF PULMONARY VENOUS FLOW** Times Cited: 93
By: KEREN, G; BIER, A; SHEREZ, J; et al.
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY Volume: 7 Issue: 3 Pages: 693-695 Published: MAR 1986

27. **Usefulness of Left Ventricular Diastolic Dysfunction as a Predictor of One-Year Rehospitalization in Survivors of Acute Myocardial Infarction** Times Cited: 14
By: Khumri, Taiyeb A.; Reid, Kimberly J.; Kosiborod, Mikhail; et al.
AMERICAN JOURNAL OF CARDIOLOGY Volume: 103 Issue: 1 Pages: 17-21 Published: JAN 1 2009

28. **TEMPORAL EVOLUTION OF ISCHEMIC DAMAGE IN RAT-BRAIN MEASURED BY PROTON NUCLEAR-MAGNETIC-RESONANCE IMAGING** Times Cited: 180
By: KNIGHT, RA; ORDIDGE, RJ; HELPERN, JA; et al.
STROKE Volume: 22 Issue: 6 Pages: 802-808 Published: JUN 1991

29. **Detecting acute coronary syndrome in the emergency department with cardiac magnetic resonance imaging** Times Cited: 236
By: Kwong, RY; Schussheim, AE; Rekhraj, S; et al.
CIRCULATION Volume: 107 Issue: 4 Pages: 531-537 Published: FEB 4 2003

30. **Reference left atrial dimensions and volumes by steady state free precession cardiovascular magnetic resonance** Times Cited: 112
By: Maceira, Alicia M.; Cosin-Sales, Juan; Roughton, Michael; et al.
JOURNAL OF CARDIOVASCULAR MAGNETIC RESONANCE Volume: 12 Article Number: 65 Published: NOV 11 2010

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