



## MANUSCRIPTS

### In Press

1. Jamshidi, P; Roos M, Kobza R, Toggweiler S, Zuber M, Erne P. Impact of Preload Changes on Positive and Negative Left-ventricular dP/dt and Systolic Time Intervals. *Indian Heart Journal*. *Forthcoming 2011*.
2. Karabsheh S, Arand P, Michaels AD. Nesiritide Acutely Prolongs Electromechanical Activation Time, a Non-invasive Acoustic Cardiographic Marker of Contractility, in Heart Failure Patients. *Forthcoming 2011*.

### Published Manuscripts

#### 2011

1. Karabsheh S, Michaels AD. Acoustic Cardiographic Indices of Transmyocardial Ischemia During Percutaneous Coronary Intervention. *Acute Cardiac Care*. 2011, 13(1): 3-8.
2. Dillier R, Zuber M, Arand P, Erne S, Erne P. Assessment of Systolic and Diastolic Function in Heart Failure Using Ambulatory Monitoring with Acoustic Cardiography. *Annals of Medicine*. 2011, 43(5): 403-411.
3. Dillier R, Zuber M, Arand P, Erne S, Erne P. Assessment of Systolic and Diastolic Function in Asymptomatic Subjects using Ambulatory Monitoring with Acoustic Cardiography, *Clinical Cardiology*. 2011, 34(6): 384-388.

#### 2010

1. Zuber M, Roos M, Kobza, R, Toggweiler S, Meier R, Erne P. Detection and Hemodynamic Significance of Cardiac Pacemaker-Induced Phrenic Nerve Stimulation. *Congestive Heart Failure*. 2010, 16(4):147-152.
2. Michaels AD, Khan FU, Moyers B. Experienced Clinicians Improve Detection of Third and Fourth Heart Sounds by Viewing Acoustic Cardiography. *Clinical Cardiology*. *Published online Feb. 2, 2010 33(3):E36-42*.
3. Collins SP, Kontos M, Michaels AD, Zuber M, Kipfer P, Jost CA, Roos M, Jamshidi P, Erne P, Lindsell CJ. Utility of a Bedside Acoustic Cardiographic Model to Predict Elevated Left Ventricular Filling Pressure. *Emerg Med J*. 2010, 27:677-682.
4. Zuber M, Erne P. Acoustic cardiography to improve detection of coronary artery disease with stress testing. *World J of Cardiology*. 2010, 2(5): 118-124.
5. Chao T, Sung S, Cheng H, Yu W, Wang K, Huang C, Chen C. Electromechanical Activation Time in the Prediction of Discharge Outcomes in Patients Hospitalized with Acute Heart Failure Syndrome. *Internal Med*. 2010, 49: 2031-2037.
6. Dillier R, Kobza, R, Erne S, Zuber M, Arand P, Erne P. Non-invasive Detection of Left-ventricular Systolic Dysfunction in Atrial Fibrillation. *Cardiology Research and Practice*. 2010.

7. Gupta S, Gupta N, Arand P, Michaels AD. Computerized Acoustic Cardiography Correlates with Echocardiography and Invasive Hemodynamics after Percutaneous Transvenous Mitral Commissurotomy. *J Med Eng Technol. Epub Nov 2 2010.* 2011, 35(1): 59-64.
8. Kosmicki DL, Collins SP, Kontos MC, Zuber M, Kipfer P, Attenhofer Jost C, Michaels AD. Non-invasive prediction of left ventricular systolic dysfunction in patients with clinically suspected heart failure using acoustic cardiography. *Congestive Heart Failure.* 2010. 16: 249-253.
9. Dennis A, Michaels AD, Arand P, Ventura D. Noninvasive Diagnosis of Pulmonary Hypertension Using Heart Sound Analysis. *Computers in Medicine and Biology.* 2010. 40(9): 758-764.
10. Maisel AS, Peacock WF, Shah KS, Clopton P, Diercks D, Hiestand B, Kontos MC, Mueller C, Nowak R, Chen WJ, Collins SP. Acoustic Cardiography S3 Detection Use in Problematic Subgroups and B-type Natriuretic Peptide "Gray Zone": Secondary Results from the Heart Failure and Audicor Technology for Rapid Diagnosis and Initial Treatment Multinational Investigation. *Am J Emergency Medicine.* 2010. published online July, 2010.
11. Taha N, Zhang J, Ranjan R, Daneshvar S, Castillo E, Guillen E, Montoya MC, Velasquez G, Naqvi TZ. Biventricular Pacemaker Optimization Guided by Comprehensive Echocardiography – Preliminary Observations Regarding the Effects on Systolic and Diastolic Ventricular Function and Third Heart Sound. *J of the Am Soc of Echocardiography.* 2010, 23(8): 857-866.
12. McCullough PA, Zerka M, Heimbach E, Musialczyk M, Spring T, Dejong A, Jafri SS, Coleman C, Washington T, Raheem S, Vanhecke T, Zalesin KC. Audiocardiography in the cardiovascular evaluation of the morbidly obese. *Clin Physiol Funct Imaging,* 2010, 30(5): 369-374.
13. Hasan A. How Should Echocardiography Be Used in CRT Optimization? *J of the Am Society of Echocardiography.* 2010, 23(8): 867-871.

## 2009

1. Roos M, Kobza R, Jamshidi P, Bauer P, Resink T, Schlaepfer R, Stulz P, Zuber M, Erne P. Improved Cardiac Performance Through Pacing-induced Diaphragmatic Stimulation: A Novel Electrophysiological Approach in Heart Failure Management?. *Europace.* 2009; 11:191-199.
2. Collins SP, Peacock FP, Lindsell CJ, Clopton P, Diercks D, Hiestand B, Hogan C, Kontos MC, Mueller C, Nowak R, Chen WJ, Huang CH, Abraham WT, Amsterdam E, Breidhardt T, Daniels L, Hasan A, Hudson M, McCord J, Naz T, Wagoner L, Maisel A. S3 Detection as a Diagnostic and Prognostic Aid in Emergency Department Patients with Acute Dyspnea: Primary Results from the HEARD-IT Multinational Investigation. *Annals of Emergency Medicine.* 2009; 53: 748-757.
3. Lee E, Drew BJ, Selvester R, Michaels AD. Sequence of Electrocardiographic and Acoustic Cardiographic Changes and Angina During Coronary Occlusion and Reperfusion in Patients Undergoing Percutaneous Coronary Intervention. *Annals of Non-Invasive Electrocardiology;* 2009; 14(2):137-146.
4. Gupta S., Michaels AD. Relationship Between Accurate Auscultation of the Fourth Heart Sound and Level of Physician Experience. *Clinical Cardiology.* 2009; 32(2):69-75.
5. Lee E, Drew BJ, Selvester RH, Michaels AD, Diastolic Heart Sounds as an Adjunctive Diagnostic Tool with ST criteria for Acute Myocardial Ischemia, *Acute Cardiac Care.* 2009; 11(4): 229-235.
6. Collins SP, Lindsell CJ, Zuber M, Kontos MC, Kipfer P, Attenhofer Jost C, Kosmicki D, Michaels AD. Bedside Prediction of Increased Filling Pressure using Acoustic Electrocardiography. *American Journal of Emergency Medicine.* 2009; 27: 397-408
7. Rogers RK, Stehlik J, Stoddard GJ, Greene T, Collins SP, Peacock WF, Maisel AD, Clopton P, Michaels AD. Adjusting for clinical covariates improves the ability of BNP to distinguish cardiac from non-cardiac dyspnea: a sub-study of HEARD-IT. *European Journal of Heart Failure,* 2009. 11(1): 1043-1049.

- Collins SP, Lindsell CJ, Naftilan AJ, Peacock WF, Diercks D, et al. Low-Risk acute heart failure patients: external validation of the society of chest pain center's recommendations. *Critical Pathways in Cardiology*. 2009. 8(3): 99-103.

## 2008

- Lee E, Michaels AD, Selvester RH, Drew BJ. Frequency of Diastolic Third and Fourth Heart Sounds with Myocardial Ischemia Induced During Percutaneous Coronary Intervention. *Journal of Electrocardiography* 2008, 42(1): 39-45.
- Rogers RK, Collins SP, Kontos MC, Zuber M, Arand P, Michaels AD. Diagnosis and Characterization of Left Ventricular Hypertrophy by Computerized Acoustic Cardiography, Brain Natriuretic Peptide, and Electrocardiography. *Journal of Electrocardiography* 2008, 41(6):518-525.
- Erne P. Beyond Auscultation: Acoustic Cardiography in the Diagnosis and Assessment of Cardiac Disease. *Swiss Medical Weekly*. 2008; 138(31-32); 439-452.
- Zuber M, Toggweiler S, Quinn-Tate L, Brown L, Amkieh A, Erne P. A Comparison of Acoustic Cardiography and Echocardiography for Optimizing Pacemaker Settings in Cardiac Resynchronization Therapy. *Pacing and Clinical Electrophysiology (PACE)*. 2008; Vol. 31 Issue No. 7:802-811.
- Kobza R, Roos M, Toggweiler S, Zuber M, Erne P. Recorded Heart Sounds for Identification of Ventricular Tachycardia. *Resuscitation* 2008 Nov; 79(2):265-72.
- Karabsheh S, Neuharth RM, Hamdan MH, Michaels AD. Acoustic Cardiographic Recording during Ventricular Fibrillation. Case Report. *Resuscitation* 2008; Vol 78: 374-377.
- Efstratiadis S, Michaels AD. Computerized Acoustic Cardiographic Electromechanical Activation Time Correlates with Invasive and Echocardiographic Parameters of Left Ventricular Contractility. *Journal of Cardiac Failure (JCF)* 2008; Vol. 14 Issue 7:577-582.
- Shah SJ, Nakamura K, Marcus G, Gerber I, McKeown B, Jordan M, Huddleston M, Foster E, Michaels A. Association of the Fourth Heart Sound with Increased Left Ventricular End-Diastolic Stiffness. *Journal of Cardiac Failure (JCF)* 2008; Vol. 14 No. 5:431-436.
- Roos M, Toggweiler S, Jamshidi P, Zuber M, Kobza R, Meier R, Erne P. Non-invasive Detection of Left-Ventricular Systolic Dysfunction by Acoustic Cardiography in Cardiac Failure Patients. *Journal of Cardiac Failure (JCF)* 2008; Vol. 14 No. 4:310-319.
- Zuber M, Toggweiler S, Roos M, Kobza R, Jamshidi P, Erne P. Comparison of Different Approaches for Optimization of Atrioventricular and Interventricular Delay in Biventricular Pacing. *Europace* 2008 Mar;10(3):367-373.
- Shah SJ, Marcus GM, Gerber IL, McKeown BH, Vessey JC, Jordan MV, Huddleston M, Foster E, Chatterjee K, Michaels AD. Physiology of the Third Heart Sound: Novel Insights from Tissue Doppler Imaging and Invasive Left Ventricular Hemodynamic. *Journal of American Society of Echocardiography*, 2008 Apr; 21(4):394-400.
- Lee E. An Electrocardiographic and Acoustic Cardiographic Study of Acute Coronary Occlusion During Percutaneous Coronary Intervention. 2008. Dissertation.

## 2007

- Zuber M, Attenhofer Jost, C, Kipfer P, Collins SP, Michota F, Peacock WF. Acoustic Cardiography Augments Prolonged QRS Duration for Detecting Left Ventricular Dysfunction. *Annals of Noninvasive Electrocardiology*, 2007 Oct;12(4):316-328.
- Toggweiler S, Zuber M, Kobza R, Roos M, Jamshidi P, Erne P. Improved Response to Cardiac Resynchronization Therapy Through Optimization of Atrioventricular and Interventricular Delays Using Acoustic Cardiography: A Pilot Study. *Journal of Cardiac Failure*. 2007 Oct;13 No. 8:637-642.

3. Michaels AD, Viswanathan MN, Jordan MV, Chatterjee K. Computerized Acoustic Cardiographic Insights into the Pericardial Knock in Constrictive Pericarditis. *Clinical Cardiology*. 2007 Sep; 30: 450-458.
4. Moyers B, Shapiro M, Marcus GM, Gerber IL, McKeown BH, Vessey JC, Jordan MV, Huddleston M, Foster E, Chatterjee K, Michaels AD. The Performance of Phonoecardiographic Left Ventricular Systolic Time Intervals and B-type Natriuretic Peptide Levels in the Diagnosis of Left Ventricular Dysfunction. *Annals of Noninvasive Electrocardiology*, 2007 Apr;12(2):89-97.
5. Shapiro M, Moyers B, Marcus GM, Gerber IL, McKeown BH, Vessey JC, Jordan MV, Huddleston M, Foster E, Chatterjee K, Michaels AD. Diagnostic Characteristics of Combining Phonocardiographic Third Heart Sound and Systolic Time Intervals for the Prediction of Left Ventricular Dysfunction. *Journal of Cardiac Failure*. 2007 Feb; Vol. 13. No 1:18-24.
6. Toggweiler S, Kobza R, Roos M, Erne P. Visualizing Pacemaker-Induced Phrenic Nerve Stimulation with Acoustic Cardiography. *Pacing and Clinical Electrophysiology*. 2007 Jun; Vol. 30:806.
7. Zuber M, Kipfer P, Attenhofer Jost CH. Usefulness of Acoustic Cardiography to Resolve Ambiguous Values of B-Type Natriuretic Peptide Levels in Patients with Suspected Heart Failure. *The American Journal of Cardiology*. 2007 Sep;Vol. 100, Issue 5: 866-869.

## 2006

1. Collins SP, Lindsell CJ, Peacock WF, Hedger VD, Eckert DC, Askew J, Storrow AB. The Combined Utility of an S3 Heart Sound and B-type Natriuretic Peptide Levels in Emergency Department Patients with Dyspnea. *Journal of Cardiac Failure*. 2006 May; 12(4):286-292.
2. Collins SP, Lindsell CJ, Peacock WF, Hedger VD, Storrow AB. The Effect of Treatment on the Presence of Abnormal Heart Sounds in Emergency Department Patients with Heart Failure. *American Journal of Emergency Medicine*. 2006 Jan; 24(1):25-32.
3. Collins SP, Lindsell CJ, Peacock WF, Eckert DC, Askew J, Storrow AB. Clinical Characteristics of Emergency Department Heart Failure Patients Initially Diagnosed with non-Heart Failure. *BioMed Central Emergency Medicine*. 2006 Nov 14; 6:11.
4. Harris I, Lee E, Yeghiazarians Y, Drew BJ, Michaels AD. Phonocardiographic Timing of Third and Fourth Heart Sounds during Acute Myocardial Infarction. *Journal of Electrocardiology*. 2006 Jul; 39:305-309.
5. Hasan A, Abraham WT, Quinn-Tate L, Brown L, Amkieh A. Optimization of Cardiac Resynchronization Devices Using Acoustic Cardiography: a Comparison to Echocardiography. *Congestive Heart Failure*. 2006 Jul; 12(4 suppl 1):25-31.
6. Marcus G, Vessey J, Jordan M, Huddleston M, McKeown B, Gerber IL, Foster E, Chatterjee K, McCulloch C, Michaels AD. Relationship between Accurate Auscultation of a Clinically Useful Third Heart Sound and Level of Experience. *Archives of Internal Medicine*. 2006 Mar 27; 166:617-622.
7. Peacock WF. Acoustic Cardiography in the Differential Diagnosis of Dyspnea - (Case Report) *Congestive Heart Failure*. 2006 Jul-Aug; 12(4 suppl 1):41-43.
8. Peacock WF, Harrison A, Moffa D. Clinical and Economic Benefits of Using AUDICOR S3 Detection for Diagnosis and Treatment of Acute Decompensated Heart Failure. *Congestive Heart Failure*. 2006 Jul-Aug; 12(4 suppl 1):32-36.
9. Peacock WF, Harrison A, Maisel A. The Utility of Heart Sounds and Systolic Intervals Across the Care Continuum. *Congestive Heart Failure*. 2006 Jul-Aug; 12(4 suppl 1):2-7.
10. Roos M, Toggweiler S, Zuber M, Jamshidi P, Erne P. Acoustic Cardiographic Parameters and their Relationship to Invasive Hemodynamic Measurements in Patients with Left Ventricular Systolic Dysfunction. *Congestive Heart Failure*. 2006 Jul-Aug; 12(4 suppl 1):19-24.

11. Shah SJ, Michaels AD. Hemodynamic Correlates of the Third Heart Sound and Systolic Time Intervals. *Congestive Heart Failure*. 2006 Jul-Aug; 12(4 suppl 1):8-13.
12. Shah SJ, Marcus GM, Gerber IL, McKeown BH, Vessey JC, Jordan MV, Huddleston M, Foster E, Chatterjee K, Michaels AD. High-Sensitivity C-Reactive Protein and Parameters of Left Ventricular Dysfunction. *Journal of Cardiac Failure*. 2006 Feb; Vol 12 No.1:61-65.
13. Toggweiler S, Zuber M, Erne P. Optimization of Atrioventricular and Interventricular Delay with Acoustic Cardiography in Biventricular Pacing. *Congestive Heart Failure*. 2006 Jul-Aug; 12(4 suppl 1):37-40.
14. Zuber M, Kipfer P, Attenhofer-Jost C. Systolic Dysfunction: Correlation of Acoustic Cardiography with Doppler Echocardiography. *Congestive Heart Failure*. 2006 Jul-Aug; 12(4 suppl 1):14-18.

#### **2005 and before**

1. Collins SP, Arand P, Lindsell CJ, Peacock WF, Storrow AB. Prevalence of the Third and Fourth Heart Sound in Asymptomatic Adults. *Congestive Heart Failure*. 2005 Sep-Oct; 11:242-247.
2. Marcus G, Gerber IL, McKeown B, Vessey J, Jordan MV, Huddleston M, McCulloch CE, Foster E, Chatterjee K, Michaels AD. Association Between Phonocardiographic Third and Fourth Heart Sounds and Objective Measures of Left Ventricular Function. *Journal of the American Medical Association*. 2005 May 11; 293(18):2238-2244.
3. Warner RA, Anderson E, Arand P. Enhancement of the Detection of Left Ventricular Enlargement by the Combination of ECG and Acoustical Findings. *International Journal of Bioelectromagnetism*. 2003; 5(1): 193-196.