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ACUTE CORONARY SYNDROMES

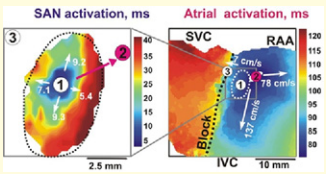
Prior Aspirin Use Does Not Increase Risk of ACS 1376

Jonathan D. Rich, Christopher P. Cannon, Sabina A. Murphy, Jie Qin, Robert P. Giugliano, Eugene Braunwald

While aspirin is clearly beneficial for the treatment of an acute coronary syndrome (ACS), some studies have suggested worse outcomes in those who were taking aspirin prior to their ACS. Rich and colleagues evaluated 66,443 ACS patients from a merged database of TIMI (Thrombolysis In Myocardial Infarction) trials. Prior aspirin users were older, had more coronary risk factors, and were more likely to have previously been diagnosed with coronary artery disease. Unadjusted analyses showed worse outcomes for aspirin users, but after multivariate analysis, there was no difference in total mortality at day 30 or by the last follow-up visit. Prior aspirin use identifies patients with greater baseline risk but does not affect outcomes in ACS patients.

HEART RHYTHM DISORDERS

Optical Mapping of the Human Sinus Node 1386



Vadim V. Fedorov, Alexey V. Glukhov, Roger Chang, Geran Kostecki, Hyuliya Aferol, William J. Hucker, Joseph P. Wuskell, Leslie M. Loew, Richard B. Schuessler, Nader Moazami, Igor R. Efimov

The site of origin and pattern of excitation within the human sinoatrial node (SAN) has not been directly mapped. Fedorov and colleagues optically mapped the SAN in preparations from human hearts and reconstructed the 3-dimensional structure of the SAN with histology. Excitation originated in the middle of the SAN, and then slowly spread within the SAN. After a conduction delay within the SAN, the atrial myocardium was excited via superior, middle, and/or inferior sinoatrial exit pathways. The SAN structure was functionally insulated from the atrium by connective tissue, fat, and coronary arteries, except for these exit pathways. This study maps the pattern of excitation within the human SAN, and the exit pathways into the right atrium.

Editorial Comment: Miguel Valderrábano, Amish S. Dave, p. 1395

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IMAGING OF CORONARY CALCIUM

CAC Score Improves Coronary Risk Prediction **1397**

Raimund Erbel, Stefan Möhlenkamp, Susanne Moebus, Axel Schmermund, Nils Lehmann, Andreas Stang, Nico Dragano, Dietrich Grönemeyer, Rainer Seibel, Hagen Kälsch, Martina Bröcker-Preuss, Klaus Mann, Johannes Siegrist, Karl-Heinz Jöckel, for the Heinz Nixdorf Recall Study Investigative Group

Erbel and colleagues used data from over 4,000 subjects without known coronary artery disease at baseline to determine net reclassification improvement (NRI) and risk prediction based on coronary artery calcification (CAC) scoring in comparison to traditional risk factors. The baseline risk was categorized into low, intermediate, and high according to the Framingham risk score (FRS) or Adult Treatment Panel III guidelines, and subjects were followed for 5 years. Reclassifying FRS 10-year intermediate-risk (defined as 10% to 20% and 6% to 20%) subjects with CAC <100 to the low-risk category and with CAC ≥ 400 to the high-risk category yielded an NRI of 22% and 31%, respectively. CAC scoring results in a high reclassification rate in the intermediate-risk cohort.

IMAGING OF CORONARY CALCIUM

CAC Score and 10-Year Coronary Risk **1407**

Suzette E. Elias-Smale, Rozemarijn Vliegenthart Proença, Michael T. Koller, Maryam Kavousi, Frank J. A. van Rooij, Myriam G. Hunink, Ewout W. Steyerberg, Albert Hofman, Matthijs Oudkerk, Jacqueline C. M. Witteman

Elias-Smale and colleagues followed over 2,000 subjects with a mean age of 70 years for 10 years to examine the effect of coronary calcium on the risk of 10-year hard coronary heart disease (CHD) events. A total of 52% of subjects initially classified as intermediate-risk based on their Framingham risk scores were reclassified by means of coronary artery calcium (CAC) score: to high-risk for a CAC >615 and to low-risk for CAC <50. In a general population of elderly persons at intermediate CHD risk, CAC scoring is a powerful method to reclassify persons into more appropriate risk categories.

Editorial Comment: Daniel Duprez, p. 1415

PRE-CLINICAL RESEARCH

Doxycycline Improves Survival in a Mouse Model of Cardiac Proteinopathy **1418**

Hanqiao Zheng, Mingxin Tang, Qingwen Zheng, Asangi R. K. Kumarapeli, Kathleen M. Horak, Zongwen Tian, Xuejun Wang

Transgenic (TG) cardiac overexpression of missense mutant αB-crystallin (CryABR120G) causes aberrant protein aggregation and cardiomyopathy, recapitulating key features of human desmin-related cardiomyopathy (DRC). Zheng and colleagues treated TG mice with either doxycycline or placebo. Doxycycline treatment significantly attenuated cardiac hypertrophy and improved survival. In cell culture, doxycycline suppressed the formation of both protein aggregates and oligomers. Doxycycline decreases the toxicity of aberrant CryABR120G production and may be useful for human DRC.

Editorial Comment: Francisco Villarreal, Wilbur Y. W. Lew, p. 1427