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• Cell Surface Glycan Changes in the Spontaneous Epithelial Mesenchymal Transition of Equine Amniotic Multipotent Progenitor Cells: Lange-Consiglio, A.; Accogli, G.; Desantis, S. (Valenzano)


• Multiscale Characterization of Impact of Infarct Size on Myocardial Remodeling in an Ovine Infarct Model: Zhang, P.; Li, T.; Griffith, B.P.; Wu, Z.J. (Baltimore, Md.)
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Serum Bicarbonate Is Associated with Heart Failure in the Multi-Ethnic Study of Atherosclerosis


The authors evaluated the association between serum bicarbonate and cardiovascular disease (CVD) in a cohort of 6,229 adult participants in MESA (Multi-Ethnic Study of Atherosclerosis), a community-based cohort free of CVD at baseline. CVD outcomes were defined as: (1) subclinical CVD (left ventricular mass (LVM) and aortic pulse pressure (PP) measured at baseline), (2) incident atherosclerotic cardiovascular disease (CVA) (composite of myocardial infarction, resuscitated cardiac arrest, stroke, coronary heart disease death and stroke death), and (3) incident heart failure. After a median follow-up of 8.5 years, 331 (5.3%) participants had an incident CV event and 174 (2.8%) developed incident heart failure. Diuretic use was stratified. Diuretic nonusers were associated with an estimated 3.0 g greater LVM and 1.0 mm Hg higher aortic PP. Each 1 mEq/L higher bicarbonate was associated with a 13% higher risk of incident heart failure. Among diuretic users, higher bicarbonate was not associated with CVD or incident atherosclerotic CV events. Thus, higher serum bicarbonate concentrations are associated with subclinical CVD and new heart failure.

Effects of High Density Lipoprotein Raising Therapies on Cardiovascular Outcomes in Patients with Type 2 Diabetes Mellitus, with or without Renal Impairment: The Action to Control Cardiovascular Risk in Diabetes Study

Papademetriou, V.; Lovato, L.; Tsioufis, C.; Cushman, W.; Applegate, W.B.; Mottle, A.; Punthakee, Z.; Nylen, E.; Doumas, M.; for the ACCORD Study Group

This post hoc analysis of the ACCORD study evaluated the interaction of risk for CV events evaluating chronic kidney disease (CKD) and cholesterol profile in patients with diabetes randomized to standard statin or statin plus fenofibrate. Among 5,464 participants, 1,910 (35%) had stages 1–3 CKD. The authors found all cardiovascular outcomes were 1.4–3 times higher among patients with CKD. In patients with CKD the addition of fenofibrate had no effect on CV outcomes. Intensive versus conventional lipid lowering therapy had no effect on CV events in CKD patients. The authors conclude that patients with type 2 diabetes at high CV risk and no CKD, fenofibrate therapy added to statin reduced CV mortality and the rate of fatal and non-fatal CHF; this was not seen in CKD.

Fibroblast Growth Factor 23 Predicts All-Cause Mortality in a Dose-Response Fashion in Pre-Dialysis Patients with Chronic Kidney Disease

Xue, C.; Yang, B.; Zhou, C.; Dai, B.; Liu, Y.; Mao, Z.; Yu, S.; Mei, C.

Fibroblast growth factor 23 (FGF23) is a phosphaturic hormone secreted by osteocytes in response to elevated calcitriol. It suppresses the activity of 1-alpha hydroxylase thereby reducing the concentration of calcitriol and completing the feedback loop. In this issue of AJN, Xue et al., report a meta-analysis of prospective studies associating FGF23 with all-cause mortality, cardiovascular disease, and renal events in patients with chronic kidney disease. Strong and direct relationships were found for each. The nature and dose dependence of the relationship with each of the outcome events is discussed in their article.
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