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IN BRIEF

LIPIDS

Arachidonic acid pathway regulates cholesterol homeostasis

Diets rich in ω -6 polyunsaturated fatty acids, of which arachidonic acid is an example, have been associated with low levels of LDL cholesterol and a high ratio of HDL cholesterol levels to total cholesterol levels in plasma, which are factors thought to be atheroprotective. Demetz *et al.* mined data from genome-wide association studies involving >100,000 individuals of European ancestry to identify common variants in genes involved in the metabolism of arachidonic acid that associate with altered plasma lipid levels. They validated the results in mice by pharmacological modulation of arachidonic acid metabolism with aspirin, which stimulated the generation of leukotrienes and lipoxins in the liver and resulted in increased reverse cholesterol transport. Treatment of mice with lipoxin mimetics effectively decreased plasma levels of LDL cholesterol. The results highlight the arachidonic acid metabolic pathway as a possible therapeutic avenue for treating atherosclerosis.

Original article Demetz, E. *et al.* The arachidonic acid metabolome serves as a conserved regulator of cholesterol metabolism. *Cell Metab.* doi:10.1016/j.cmet.2014.09.004

BONE

Mechanisms of WNT16 regulation of bone homeostasis

A new article in *Nature Medicine* sheds light on the mechanisms by which WNT16 regulates bone homeostasis. Analysis of *Wnt16*^{-/-} mice showed that they are substantially more prone to experience bone fracture than wild-type mice. Although trabecular bone volume is normal in *Wnt16*^{-/-} mice, they have thinner cortical bones and higher cortical porosity than wild-type mice. WNT16 inhibited differentiation of human and mouse osteoclasts directly (via the noncanonical pathway) by acting on osteoclast progenitors and indirectly (via the canonical and noncanonical pathways) by stimulating osteoprotegerin expression. Analysis of mice with a conditional inactivation of *Wnt16* in osteoblasts revealed that these cells are the main source of WNT16 and that the absence of WNT16 increases fracture risk.

Original article Movérare-Skrtic, S. *et al.* Osteoblast-derived WNT16 represses osteoclastogenesis and prevents cortical bone fragility fractures. *Nat. Med.* doi:10.1038/nm.3654

DIABETES

Enterovirus infection associated with T1DM risk in children

Children with a previous enterovirus infection have an increased risk of developing type 1 diabetes mellitus (T1DM), show the results of a nationwide cohort study. The researchers used Taiwan's National Health Insurance Research Database to identify children who had an enterovirus infection in 2000–2007, who were matched by sex and birth year with a random sample of children who had not had an enterovirus infection. After exclusion of children with prior T1DM, the incidence of T1DM was compared between the two groups ($n=570,133$ for each group) and was found to be significantly higher among the children with a previous enterovirus infection (HR 1.48, 95% CI 1.19–1.83). The authors suggest that preventive approaches such as vaccination could decrease the incidence of T1DM in Taiwan.

Original article Lin, H.-C. *et al.* Enterovirus infection is associated with an increased risk of childhood type 1 diabetes in Taiwan: a nationwide population-based cohort study. *Diabetologia* doi:10.1007/s00125-014-3400-z