Nature Reviews Endocrinology 9, 254 (2013); published online 26 February 2013;
doi:10.1038/nrendo.2013.49;
doi:10.1038/nrendo.2013.50;
doi:10.1038/nrendo.2013.51

IN BRIEF

DIABETES

Levels of soluble RAGE predict risk of future chronic disease and mortality

In cross-sectional analyses of 1,201 participants of the ARIC study, who were aged 47–68 years with normal kidney function and no history of cardiovascular disease, black race, male sex, higher BMI and C-reactive protein levels were independently associated with low levels of sRAGE, the soluble circulating form of the receptor for advanced glycation end products (AGEs). 192 incident coronary heart disease events, 53 ischaemic strokes, 213 deaths and 253 cases of diabetes mellitus (among those without diabetes mellitus at baseline) were recorded over 18 years of follow-up. Low levels of sRAGE were associated with risk of diabetes mellitus, coronary heart disease and mortality. The authors suggest that RAGE activation by AGEs induces inflammation that might be antagonized by sRAGE and highlight the need to further investigate racial differences in sRAGE levels.

Original article Selvin, E. *et al.* sRAGE and risk of diabetes, cardiovascular disease and death. *Diabetes* doi:10.2337/db12-1528

REPRODUCTIVE ENDOCRINOLOGY

AMH shows potential as a prognostic factor for pregnancy and live-birth outcome after *in vitro* fertilization

Anti-Müllerian hormone (AMH) levels in women undergoing *in vitro* fertilization (IVF) via intracytoplasmic sperm injection are strongly associated with live-birth rates and might partially reflect oocyte quality, according to a recent study by Brodin and colleagues. Using a prospective cohort study design, the researchers analysed AMH levels in 892 consecutive women undergoing 1,230 IVF cycles at a university-affiliated private infertility centre. Live-birth rates per started cycle increased from 10.7% for women with AMH levels <25th percentile to 30.8% for those with AMH levels >75th percentile, even after adjustments for age and oocyte yield. The most favourable treatment outcome was reported for patients with polycystic ovaries. AMH concentration also correlated with ovarian response variables and embryo scores.

Original article Brodin, T. *et al.* Antimüllerian hormone levels are strongly associated with live-birth rates after assisted reproduction. *J. Clin. Endocrinol. Metab.* doi:10.1210/jc.2012-3676

GENETICS

Accumulation of DNA double-strand breaks underlies the ageing of oocytes in mice and humans

New findings implicate serine-protein kinase ATM-mediated DNA double-strand break (DSB) repair in ovarian ageing. Titus and colleagues show that, in single mouse and human oocytes, expression of the key DNA DSB repair genes *BRCA1*, *MRE11*, *RAD51* and *ATM*, but not that of *BRCA2*, declines with age. Moreover, mice lacking *Brca1* exhibit impaired reproduction and reduced primordial follicle counts with age; in parallel, remaining follicles in these animals display increased DSBs. Oocyte-specific knockdown of genes involved in DNA DSB repair increased DSBs and reduced survival in mice. In accordance with the findings in mice, measurement of serum anti-Müllerian hormone levels in young women with germline *BRCA1* mutations showed that the ovarian reserve is impaired in these individuals.

Original article Titus, S. *et al.* Impairment of BRCA1-related DNA double-strand break repair leads to ovarian aging in mice and humans. *Sci. Transl. Med.* 5, 172ra21 (2013)