Abstract

J Mol Med (Berl). 2010 Aug;88(8):785-94.

Telomeres are shorter in myocardial infarction patients compared to healthy subjects: correlation with environmental risk factors.

Maubaret CG, Salpea KD, Jain A, Cooper JA, Hamsten A, Sanders J, Montgomery H, Neil A, Nair D, Humphries SE; HIFMECH consortium, Simon Broome Research Group.

Centre for Cardiovascular Genetics, BHF Laboratories, the Rayne Building, Department of Medicine, University College London (UCL), 5 University Street, London, WC1E 6JF, UK.

OBJECTIVE: Shorter telomeres have been reported in premature myocardial infarction (MI) patients. Our work aimed at confirming the association of shorter telomere with MI in two case-control studies and in familial hypercholesterolemia (FH) patients with coronary heart disease (CHD).

METHODS: The HIFMECH study compared 598 white male patients (<60 years) who survived a first MI and 653 age-matched controls from North and South Europe. Additionally, from the UK, 413 coronary artery bypass graft (CABG) patients and two groups of 367 and 94 FH patients, of whom 145 and 17 respectively had premature CHD, were recruited. Leukocyte telomere length (LTL) was measured using a real-time polymerase chain reaction-based method.

RESULTS: In HIFMECH, LTL was significantly shorter in subjects from the North (7.99 kb, SD 4.51) compared to the South (8.27 kb, SD 4.14; p = 0.02) and in cases (7.85 kb, SD 4.01) compared to controls (8.04 kb, SD 4.46; p = 0.04). In the CABG study, LTL was significantly shorter (6.89 kb, SD 4.14) compared to the HIFMECH UK controls (7.53, SD 5.29; p = 0.007). In both samples of FH patients, LTL was shorter in those with CHD (overall 8.68 kb, SD 4.65) compared to the non-CHD subjects (9.23 kb, SD 4.83; p = 0.012).

CONCLUSION: Apart from a consistent negative correlation with age, LTL was not associated across studies with any measured CHD risk factors. The present data confirms that subjects with CHD have shorter telomeres than controls and extends this to those with monogenic and polygenic forms of CHD.

PMID:20383691

FREE FULL TEXT

Visit us at www.spectracell.com or call us at 800.227.LABS (5227)

SPECTRACELL LABORATORIES
ADVANCED CLINICAL TESTING