

National Health Laboratory Service (NHLS) and Stellenbosch University, South Africa

³NonCommunicable Diseases Research Unit, South African Medical Research Council, South Africa

⁴Department of Medicine, University of Cape Town, South Africa

Background:

Telomeres are DNA-proteins situated at the ends of linear chromosomes, responsible for genome stabilization. Links have been described between leucocyte telomere length (LTL) and age-related inflammatory disorders such as atherosclerosis, rheumatoid arthritis and cancer. Since diabetes mellitus has been described as a chronic inflammatory condition, it has been hypothesised that there is significant LTL shortening in individuals with dysglycaemia.

Aim:

To investigate leucocyte telomere length in patients with pre-diabetes, newly diagnosed, known diabetics on treatment and compare the results to normoglycaemic individuals.

Methods:

In total, 205 participants (78% women) median age 56 years, from the Bellville-South community were followed-up between 2008 and 2011. Baseline and follow-up collections included glucose tolerance status, anthropometric, blood pressure, lipids, insulin, γ -glutamyl transferase, cotinine, and HbA1c. Telomere length was measured using the absolute telomere q-PCR method on a Bio-Rad MiniOpticon.

Results:

Although there was a change in individuals' glycaemic status over the timeframe, no significant differences were observed in LTL across glycaemic status: (Baseline $p=0.7618$, 3 Year Follow-up $p=0.2204$). However, in a multiple regression model, adjusted for age and gender: LTL was associated negatively with age and GGT, and positively with high density lipoproteins (HDL) (all $p < 0.05$).

Discussion and conclusion:

In the first longitudinal study of LTL in Africans, we show that LTL shortening is not evident nor associated with glycaemia within three years. Our findings also corroborate with previous notions associating LTL with age. Lack of association between LTL and glycaemia has been previously reported, however further studies are required using larger sample and broader BMI spread.

Main message:

In our study evaluating individuals from Bellville-South, Cape Town, South Africa, participants were recruited at Baseline and followed-up 3 years later. Previous postulations suggesting a link between LTL shortening and dysglycaemia were not evident in the 3-year timeframe.

5.10-P21

Investigating the association between leucocyte telomere length and glucose intolerance in South Africa

C Weale¹, G Davison¹, R Erasmus², A Kenge^{3,4}, T Matsha¹

¹Cape Peninsula University of Technology, South Africa

²Department of Pathology, Faculty of Medicine and Health Sciences,