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### 5.6: CARDIOVASCULAR CONSEQUENCES OF EXTREME PREMATURETY: A FOLLOW-UP FROM THE EPICURE STUDY

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mainly by LTL at birth and attrition during childhood. Therefore we can suggest that short LTL might precede clinical expression of atherosclerosis.

**Objectives:** To examine the directionality in the relation between carotid atheroma and LTL dynamics.

**Methods:** LTL was measured by TRF in samples donated 9 years apart on average by 257 men and women aged 41 to 80 at the inclusion.

**Results:** LTL attrition during follow-up (FU) period was  $25 \pm 17$  bp/year. No relation was observed between LTL attrition and presence of carotid atherosclerotic plaques (PCAP). Baseline (BL)-LTL was highly correlated ( $r=0.96$ ,  $p<0.0001$ ) with FU-LTL. In 87.9% of the subjects LTL ranking by deciles was the same 1 decile at BL and FU. BL- and FU-LTL were inversely associated with PCAP ( $p<0.01$ ). After adjusting for age and gender, BL-LTL was  $6.50 \pm 0.04$  Kb in subjects without PCAP  $6.46 \pm 0.06$  in those with PCAP only at the FU visit and  $6.27 \pm 0.06$  in those with PCAP in both BL and FU visits ( $p=0.027$ ). LTL attrition was the same in these groups.

**Conclusions:** LTL attrition in adulthood is not influenced by PCAP and does not play a significant role in LTL ranking. By contrast, patients with shorter telomeres present CAP earlier in life. Telomere length could be considered as a bio-determinant for atherosclerosis.

## 5.6

### CARDIOVASCULAR CONSEQUENCES OF EXTREME PREMATURITY: A FOLLOW-UP FROM THE EPICURE STUDY

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**Background:** Long-term outcomes following extremely preterm (EP) birth are becoming increasingly relevant, given improved survival rates. We previously reported altered arterial haemodynamics in 11 year olds who were <25 weeks gestation. The same individuals have now been re-evaluated in young adulthood.

**Methods:** EP subjects (n=130) and term-born matched controls (n=64) were seen at age 19 years for detailed hemodynamic assessments including blood pressure (BP), augmentation index (AIx), aortic pulse wave velocity (aPWV), cardiac output (CO) and peripheral vascular resistance (PVR). All subjects were drawn from the UK 1995 EPICure Study cohort.

**Results:** Brachial diastolic and mean BP was higher in EP versus controls ( $P<0.01$  for both). Similar to findings at 11 years, AIx was significantly higher in EP subjects (mean difference 6.1% 95% CI 3.4-8.7%,  $P<0.001$ ) whereas aPWV was not different. Cardiac index was similar between groups, but stroke volume index was lower and heart rate higher in EP ( $P<0.05$  for both). PVR was also significantly higher in EP (mean difference 96 dynes. $\cdot$ sec.cm<sup>5</sup>, 95% CI 27-165 dynes. $\cdot$ sec.cm<sup>5</sup>,  $P<0.001$ ).

**Conclusions:** There remains no difference between groups in aPWV from age 11 years into young adulthood, but significant differences in AIx have persisted from childhood and are associated with significantly elevated PVR. These findings suggest abnormalities in the resistance vasculature, which may be structural or functional in origin. Long-term monitoring of cardiovascular risk is recommended in this population.