10142

# Elevated telomerase bioactivity in peripheral mononuclear cells is associated with angiographic coronary stenosis

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We aimed to fill the gap between the telomerase bioactivity in peripheral blood mononuclear cells (PBMC) and age-associated coronary artery disease. Whole blood from a total of 322 subjects undergoing coronary angiography in National Taiwan University Hospital was collected transcatheterly and purified for PBMC. Functional activity of telomerase and mean terminal restriction fragments (mTRF) were assayed by telomeric repeat amplification protocol (TRAP) and Southern blot hybridization, respectively. Our results showed the elevated telomerase activity was positively associated with the presence, maximal luminal stenosis of the culprit lesion, number-of-diseased-vessels and the Duke prognostic score, after adjustment of traditional risk factors, clinical features, medical history and mTRF (p=0.004, 0.001, 0.004 and 0.001, respectively). Receiver-operating characteristic (ROC) curve analysis represented a cut-off value of 160.8 ymol of telomerase-elongation products predictive of angiographic stenosis. A subgroup of patients with 8-month follow-up angiography was analyzed and revealed a close relationship of telomerase regulation with the short-term changes in the stenotic extent within the same subject (p=0.043, N=38). Moreover, comparing telomerase alone, adding mTRF elevated the risk-prediction of coronary stenosis to an adjusted OR of 36.59 (p=0.003). Patients with elevated telomerase activity and shorter mTRF increased an adjusted OR of coronary stenosis to 21-fold, as compared with those without activated telomerase and with longer mTRF (p=0.012, N=66). In conclusion, our study suggests the regulation of telomerase in mononuclear cells, alone or in combination with the cellular age, can predict the angiographic severity of coronary stenosis.