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The association of technology based, multiple component behavioral interventions on changes in sRAGE and esRAGE among individuals with chronic kidney disease and type 2 diabetes

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The accumulation of advanced glycation end products (AGEs) and their chief cell surface receptor (RAGE), has been implicated in the development and progression of diabetic complications, particularly nephropathy and cardiovascular disease. Althoughs RAGE and esRAGE are associated with chronic kidney disease (CKD), no studies have assessed the effectiveness of behavioral modificationwith changes in soluble levels of RAGE (sRAGE and esRAGE). The objective of this pilot study is to assess the impactof a technology-supported behavioral intervention on sRAGE and esRAGE. The samples are derived from the two ongoing randomized controlled trials (n=17). Overweight individuals with CKD (stages 1 to 4) with concurrent type 2 diabetes (T2D) are engaged with multiple behavior changes for 3-6 months. The multiple behavior changes includes: restriction of dietary energy, sodium and phosphate additive intakes, and increased physical activity. Intervention groups included: a) usual care; b) social cognitive theory (SCT)-based counseling c) self-monitoring; andd) SCT-based counseling plus self-monitoring. The interventions were delivered remotely using iPads, which were provided to participants. Measurement of sRAGE and esRAGE was carried out at baseline and during follow-up using conventional ELISA. For this interm analysis, we have combined the SCT and self-monitoring groups (b and c) due to small numbers. The mean agewas 63.3± 9.0 years, and the samples comprised mostly of caucasian men (>75%). The mean body mass index was 34.3 ± 5.4 Kg/m². At the end of the follow-up, we have shown that the intervention was associated with changes in sRAGE (P=0.2) and esRAGE (P=0.03). This is the first report to our knowledge which reveals anassociation of multi-component behavior intervention strategies with changes in plasma levels of sRAGE and esRAGE.

Biography

Ram Jagannathan has completed his PhD in Clinical Medicine (Research) from Imperial College, London and presently pursuing his postdoctoral studies from NYU Langone Medical Center. He has published 13 papers in reputed journals (Lancet Diabetes and Endocrinology, Diabetes Care and the Endocrine) and serves as an *ad hoc* reviewer for ActaDiabetologica. Senior author of this report (Ann Marie Schmidt) lab discovered RAGE pathway. She is a distinguished scientist with lots of accolades and published >250 articles.

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