

Advanced Glycation End Products (AGE) and Receptor for Age (RAGE) in Patients with Active Tuberculosis

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Rationale: The receptor for advanced glycation end products (RAGE) is expressed in normal lungs and is upregulated during inflammation and infection. The interaction between AGEs and RAGE on the plasma membrane causes oxidative stress and apoptosis in lung cells. The objective of this study is to evaluate AGEs and RAGE levels in patients with active TB and healthy controls, and to investigate their relationship with food intake and nutritional status. **Methods:** Case-control study. AGE (carboxymethyl lysine, CML) and RAGE were measured by Elisa. Nutritional assessment was performed by body mass index, triceps skin-fold thickness, mid-arm circumference, mid-arm muscle circumference, bioelectrical impedance analysis, and food frequency questionnaire. **Results:** 35 TB patients and 35 controls were included in the study. The mean S-RAGE levels were higher in TB patients than in controls (68.5 ± 28.1 vs 57.5 ± 24.0 , $p=0.046$). Among cases that were current smokers, lower S-RAGE levels were associated with mortality (S-RAGE levels= 58.0 ± 36.5 [non-survivors] vs 71.3 ± 25.6 [survivors], $p=0.006$), and with weight loss (S-RAGE levels= 65.6 ± 27.4 [weight loss] vs 98.6 ± 16.7 [no weight loss], $p=0.034$). There was no statistically significant difference in CML levels and diet CML content between cases and controls. Malnutrition was more frequent in cases than in controls, but there was no correlation between nutritional parameters and CML or S-RAGE levels. **Conclusions:** TB patients had higher S-RAGE levels than controls. S-RAGE may play a role in disease manifestations and outcomes, being associated with weight loss and mortality.

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