Abstract

The antioxidant effects of epigallocatechin gallate (EGCG) and alpha lipoic acid (ALA) have been demonstrated in previous studies. The kidney protection effects of EGCG and ALA in patients with kidney injury are still under investigation. The purpose of this study is to investigate the anti-inflammatory and anti-oxidant effects of EGCG and ALA on high glucose-induced human kidney cell damage. EGCG inhibited high glucose(HG)-induced TNF-α and IL-6 production in human embryonic kidney cells. Both EGCG and ALA decreased HG-induced receptor of advanced glycation end products (RAGE) mRNA and protein expressions in HEK cells. EGCG and ALA also recovered HG-inhibited superoxide dismutase production and decreased ROS expressions in HEK cells. The synergism of EGCG and ALA was also studied. The effect of EGCG combined with ALA is greater than the effect of EGCG alone in all anti-inflammation and anti-oxidant experiments. Our studies provide a potential therapeutic application of EGCG and ALA in preventing progression of diabetic nephropathy.

Keywords

Diabetic nephropathy, receptor of advanced glycation end products, epigallocatechin gallate, alpha lipoic acid, anti-oxidant.