SOUTH HYPERTONIC SALINE DOWNREGULATE THE PRODUCTION LEVEL OF LPS-INDUCED MIF IN THP-1 CELLS: A NOVEL APPROACH

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Hypertonic saline (HTS) plays a central role in stroke. Recently, it has become apparent that Macrophage migration inhibitory factor (MIF) plays a central role in several immune responses including the modulation of several cytokines. MIF may serve as a general marker for systemic inflammation in septic and nonseptic acute critical illness. Besides, immunesuppressant Prostaglandin E2 (PGE2) decrease in MIF levels and inhibited T-cells proliferation when compared to control levels in our previous experiment. The addition of HTS increased MIF production as compared with PGE2-stimulated T-cells in concordance with restore PGE2-suppressed T-cells proliferation. Generally, HTS have anti-inflammatory effect so far. However, HTS have been shown proinflammatory activity by increasing MIF in our experiments. Therefore, we hypothesize, HTS maintain homeostatsis of human. The experiments were conducted to evaluate MIF after stimulating Lipopolysaccharide (LPS) in the presence or absence of HTS in monocyte in response to early phase injury. THP-1 cells were cultured in RPMI media. The effect of HTS on LPS-induced MIF was evaluated in THP-1 cells with 1 µg/mL LPS. HTS at 10, 20 or 40 mmol/L above isotonicity was added. MIF concentrations of the supernatant were determined by enzyme-linked immnosorbent assay (ELISA) and cell lysates were used for Western blots analysis. MIF concentrations were increased in LPS-induced cells compared to controls. MIF concentrations and MIF expression was lower in cells treated with HTS than LPS-stimulated cells. The role of HTS in maintaining physiological balance of human, at least in part, should be mediated through a MIF pathway.