Objectives: To investigate the synergistic effect of HMGB1 in inflammatory cytokines release from macrophages induced by CaP.

Methods: The human macrophages were stimulated with RPMI-1640, 100ug/ml CaP, 100ng/ml HMGB1 and 100ug/ml CaP+100ng/ml HMGB1 for 1h, 2h, and 4h. The supernatants were collected and IL-1β, IL-6, TNF-α, MCP-1 were determined by ELISA.

Results: The IL-1β, IL-6, TNF-α, MCP-1 in the cell culture supernatant of 100ug/ml CaP group, 100ng/ml HMGB1 group showed higher levels contrast to the blank control group for 1h, 2h and 4h (P<0.05). And 100ug/ml CaP+100ng/ml HMGB1 group also showed the same trend contrast to the blank control group. 100ug/ml CaP group, 100ng/ml HMGB1 group for 1h, 2h, and 4h (P<0.05). The levels of IL-1β, IL-6, TNF-α, MCP-1 in the cell culture supernatant of 100ug/ml CaP+10ng/ml HMGB1 group, 100ug/ml CaP+50ng/ml HMGB1 group, and 100ug/ml CaP+100ng/ml HMGB1 group were higher than that of 100ug/ml CaP group for 4h (P<0.05). Our results indicated that both CaP and HMGB1 showed an ability of inducing IL-1β, IL-6, TNF-α, MCP-1 release from macrophages. HMGB1 had synergistic effect on IL-1β, IL-6, TNF-α, MCP-1 release from macrophages induced by CaP.

Conclusion: HMGB1 acted in synergy with CaP in activating macrophages to secrete proinflammatory cytokines.