Anti-inflammatory effect of Haloperidol in Rat: inhibit Activation of TLR/MD-2

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Introduction: Haloperidol is anti-psychotic agent that may play anti-inflammatory role. In this, study the anti-inflammatory inflammation effect of haloperidol in induction by LPS (Lipopolysaccharide of E.Coli wall) was evaluated.

Material and Methods: in first experiment haloperidol was dock with LTR4/MD-2 in silico. In second study In vivo, 120 male wistar rat divide into 8 groups. Each group contain 15 male rat. 1) Hal (haloperidol) 0.5 mg/kg, 2) Hal 1 mg/kg, 3) Hal 2 mg, 4) Hal 0.5 mg/kg po- LPS ip, 5) Hal 1 mg/kg po-LPS ip, 6) Hal 2 mg/kg po-LPS ip, 7) normal saline po and ip, 8) normal saline po and LPS ip. All gavages was done one time for 7 days. Blood sample was collected 0.5, 3 and 6 hour later as the sub group. CRP, Fibrinogen and a 2Macrogloboline as index in inflammation were assessed by ELISA kit.

Result: in first study in silico of docking LTR/MD-2 showed potential of inhibition LTR/MD-2/LPS complex. in vivo study haloperidol showed inhibition in of CRP elevation. This inhibition are in acute phase of inflammation was seen. Although alpha 2 Macroglobulin and fibrinogen were increased in late phase of inflammation and haloperidol inhibited increase of both, dose-dependently effect was seen in amount of a-2 Macroglobulin conclusion: haloperidol can inhibit signal transduction of LTR4/MD-2 in signaling of inflammation.