FLUPENTIXOL AND TRIFLUPERIDOL REDUCE INTERLEUKIN-1β AND INTERLEUKIN-2 RELEASE BY RAT MIXED GLIAL AND MICROGLIAL CELL CULTURES

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Neuroleptics penetrate into the brain, where they act not only on neurons but probably also on glial cells. In the available literature, there are no reports on the effect of neuroleptics on cytokine release in glia cultures. The aim of this study was to evaluate the effect of neuroleptics on the release of proinflammatory cytokines (IL-1β and IL-2) by mixed glial and microglial cell cultures.

Trifluperidol at 20 and 2 μM reduced IL-1β secretion by mixed glial cultures after 3 days of exposure. Trifluperidol at 20, 2 and 0.2 μM diminished IL-1β secretion after 1 day of incubation. Trifluperidol at 20 and 2 μM reduced IL-2 release after 1 and 3 days of exposure. Flupentixol at 20 and 2 μM reduced IL-1β by mixed glial cell cultures after 3 days of exposure. Flupentixol at 20, 2 and 0.2 μM caused diminution of IL-1β release after 1 day of exposure. Flupentixol at 20 and 2 μM reduced IL-2 release after 1 day of incubation. Flupentixol at 20, 2 and 0.2 μM diminished IL-2 release after 3 days of exposure. Flupentixol at 20, 10, 2 and 0.2 μM reduced IL-1β release by microglial cell cultures. Flupentixol at 20, 10 and 2 μM reduced release of IL-2 by microglial cells after 1 day of exposure.

The results of the present study suggest that neuroleptics have an inhibiting effect on the release of glial cytokines, but clinical significance this results remains to be elucidated.

Key words: glia, IL-2, IL-1β, flupentixol, trifluperidol

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