CHANGES IN GLIAL RESPONSE AND REDUCTION OF CLINICAL SYMPTOMS IN A RAT EAE MODEL AFTER TRIFLUSAL ADMINISTRATION.

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In this study we analysed the putative anti-inflammatory effect of Triflusal in the course of experimental allergic encephalomyelitis (EAE). Lewis rats were immunized by MBP injection and, six day after, administrated daily with oral doses of Triflusal (30mg/kg) until sacrifice. A group of immunized animals received vehicle solution instead Triflusal. Non-immunized animals with or without Triflusal were used as controls. Animals were evaluated daily using a clinical score test. Animals were sacrificed at the 14th day post-immunization and glial reactivity was evaluated in brainstem and spinal cord by GFAP immunohistochemistry and tomato lectin (TL) histochemistry. Ribonuclease Protection Assay (RPA) was performed to determine gene expression of different molecules related to glial cells and cytokines including TNF-alpha, TNF-beta, IL-1alpha and IL-6. Animals that developed the EAE disease, in addition to significant weight loss, showed hindlimb paralysis which was associated to glial reactivity. Although astrocytes were hypertrophic in both areas, no increase in GFAP mRNA was found in the spinal cord. However, we observed a MAC-1 mRNA increase in both areas, that correlated with enhanced TL binding and the formation of a characteristic reticular mesh of microglial cell processes around some blood vessels. Moreover, there was an increase in cytokine gene expression. In EAE animals that received Triflusal, weight loss was reduced and symptomathology associated with the disease diminished considerably. Although astroglial and microglial reactivity was also apparent, the morphology and distribution pattern of these glial cells became different. In these animals, high number of round TL+ cells was detected but microglial reticular mesh associated with blood vessels was not observed. RPA analysis indicated that gene expression of GFAP and cytokines was not affected by Triflusal administration whereas MAC-1 expression increased at brainstem levels. In conclusion, Triflusal administration modifies the glial response and significantly reduces the symptomathology associated to the rat Lewis EAE model.