

AS15-02 - ANTIDEPRESSANTS AND ANTIINFLAMMATORY AGENTS ON IMMUNE-KYNURENINE PATHWAY: RESULTS FROM IN-VITRO STUDIES

A.M.Myint

Ludwig-Maximilians-University Munich, Munich, Germany

There are reports demonstrating anti-inflammatory action of antidepressants. Anti-inflammatory effect of both antidepressants and anti-inflammatory medication such as celecoxib or aspirin could be beneficial in treatment of depression since inflammatory changes are well documented to be involved in pathophysiology of depression. Moreover, inflammatory response system (IRS) activation could induce imbalances in kynurenine metabolites and could in turn induce neurotoxic changes. There is also report mentioning the action of antidepressants as rebalancing the kynurenines disturbance in in-vitro studies.

Therefore, series of experiments were performed to investigate how IRS activation could induce disturbances in kynurenines and how antidepressants and anti-inflammatory medications could work on immunologically challenged mouse astrocytes cultures. The Toll Like Receptor (TLR) 3 and 4 challenges using PolyI:C and LPS and Interferon (IFN)- γ were performed. The NF κ B and IRF3 signalling and IL1 β , interferon- β and tumour necrosis factor- α productions are analysed using commercial ELISA and tryptophan and kynurenines are measured using high performance liquid chromatography.

The results indicated that TLR4 activation could not directly affect on astrocytes whereas PolyI:C and IFN could induce significant disturbances in kynurenines. Regarding the effect of medication, imipramine showed the most significant reversal effect on immune challenges in mouse astrocytes.

Imipramine could be the treatment of choice for treatment resistant depression where there is IRS activation.