ARE ANTI-INFLAMMATORY DRUGS THE ANTIDEPRESSANT OF THE FUTURE?

Brunello Nicoletta (1), Alboni Silvia (1), Capone Giacomo (1), Benatti Cristina (1), Tascedda Fabio (1), Mendlewicz Julien (2)(1)

(1) Department of Biomedical Sciences, University of Modena and Reggio Emilia, Italy
(2) Department of Psychiatry, Erasme Hospital

Depression currently ranks fourth among the major causes of disability worldwide and, by 2020, it is estimated that unipolar major depression will rank second as a source of lost disability-adjusted life years (DALYs) worldwide. Effective treatments have been available for many years and the introduction of the selective 5-HT reuptake inhibitors (SSRIs) has improved the safety and tolerability of antidepressant medication considerably. However, despite these advances, the delay in the onset of action of antidepressant medication remains one of the unsolved issues in the treatment of depressive disorders. There is thus considerable need for discovering new strategies to relieve depressive symptoms more rapidly than classical treatments.

At a clinical level, it has been known for years that depression may share identical symptoms as those in inflammatory reaction and that immune function and inflammation markers are altered in psychiatric patients. Moreover different antidepressant drugs have shown anti-inflammatory properties and this effect could be essential in mediating the clinical response of these drugs through a neuroprotective action. The fact that antidepressant drugs have shown an anti-inflammatory effect supports the hypothesis that inflammation is not just an epiphenomenon, but rather may be related to the pathogenesis of the disorder. Thus the use of anti-inflammatory drugs could be an adjunctive therapy for depression, and in fact an improvement in psychiatric symptoms has been recently reported in patients treated with anti-inflammatory drugs for other indications.

On these bases, we have evaluated whether the administration of acetylsalicylic acid (ASA), an anti-inflammatory drug endowed with a neuroprotective action could ameliorate the antidepressant effect of fluoxetine (FLX), a widely used SSRI, in an animal model of depression: the chronic escape deficit. In this model most antidepressants need to be administered for at least 3 weeks in order to revert the condition of escape deficit. Combined treatment of FLX and ASA completely reverted the condition of escape deficit as early as after 7 days, the effect being already partially present after 4 days whereas the effect of fluoxetine was significant only at 21 days. These results suggest that ASA might accelerate the onset of action of FLX. To our knowledge this is the first study showing that aspirin at low dose might potentiate the antidepressant effect of an SSRI.