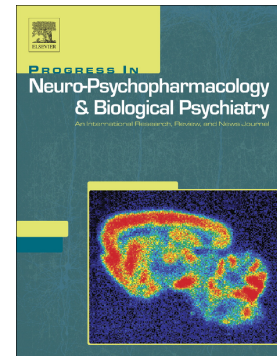


## Accepted Manuscript

Effect of antidepressant treatment on peripheral inflammation markers – A meta-analysis

Magdalena Więdoła, Piotr Marcinowicz, Renata Krupa, Marlena Janoska-Jaździk, Marta Janus, Weronika Dębowska, Anna Mosiołek, Napoleon Waszkiewicz, Agata Szulc



PII: S0278-5846(17)30065-9  
DOI: doi: [10.1016/j.pnpbp.2017.04.026](https://doi.org/10.1016/j.pnpbp.2017.04.026)  
Reference: PNP 9087

To appear in: *Progress in Neuropsychopharmacology & Biological Psychiatry*

Received date: 25 February 2017

Accepted date: 18 April 2017

Please cite this article as: Magdalena Więdoła, Piotr Marcinowicz, Renata Krupa, Marlena Janoska-Jaździk, Marta Janus, Weronika Dębowska, Anna Mosiołek, Napoleon Waszkiewicz, Agata Szulc, Effect of antidepressant treatment on peripheral inflammation markers – A meta-analysis. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Pnp(2017), doi: [10.1016/j.pnpbp.2017.04.026](https://doi.org/10.1016/j.pnpbp.2017.04.026)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Effect of antidepressant treatment on peripheral inflammation markers – a meta-analysis**

Magdalena Więdołcha, Piotr Marcinowicz, Renata Krupa, Marlena Janoska-Jaździk, Marta Janus, Weronika Dębowska, Anna Mosiołek, Napoleon Waszkiewicz, Agata Szulc

**INTRODUCTION**

According to World Health Organization (WHO) prognostics depression is going to be the second most frequent cause of disability worldwide by 2030 [WHO, 2008]. The rising prevalence and severity of depressive disorders are, inter alia, a derivative of increasing morbidity and drug resistance. Studies indicate that in case of 30-40% of patients suffering from a Major Depressive Disorder (MDD), the symptoms remain resistant to pharmacological treatment [Hernandez et al., 2013]. Identification of biomarkers that would predict therapy response, as well as development of a more profound understanding of the disorder pathophysiology, are key issues for improvement of treatment efficacy and patients' prognosis. Despite many years of research and various evidence based theories regarding molecular processes, the pathogenesis of MDD remains unclear.

The well-established monoamine hypothesis assumes a depletion of neurotransmitters: serotonin (5-HT) and noradrenaline (NA) in certain brain regions [Gupta et al., 2016]. The neurotrophic hypothesis explains the occurrence of depressive symptoms as a consequence of disordered neuroplasticity, neurogenesis and resilience caused by diminution of brain-derived neurotrophic factor (BDNF). Animal studies followed by clinical trials confirmed that antidepressant drugs act not only on the neurotransmission but also result in increases of BDNF levels [Gupta et al., 2016]. Finally, the pro-inflammatory hypothesis which proposes pro-inflammatory cytokines as factors inducing depressive symptoms has also developed a solid scientific background [Halaris et al., 2015]. It is known that experimental administration of interleukins 1 $\beta$  and 6 (IL-1 $\beta$ , IL-6) and tumor necrosis factor alpha (TNF- $\alpha$ ) exerts a depressive effect including fatigue, anxiety and somnolence in humans [Gupta et al., 2016; Hashimoto, 2015; Köhler et al., 2014]. In rodents exposed intravenously to lipopolysaccharide (LPS), an inflammatory state occurs resulting in a depressive-like behaviour. These behavioural changes can be prevented by administration of selective serotonin reuptake inhibitors (SSRI's) or serotonin and noradrenalin reuptake inhibitors (SNRI's) [Ohgi et al., 2013]. On one hand, MDD patients have elevated pro-inflammatory cytokine blood serum levels, as was shown in a meta-analysis by Dowlati et al. regarding tumor necrosis factor (TNF- $\alpha$ ) [Dowlati et al., 2010]. On the other hand, depression is highly comorbid to chronic

Download English Version:

<https://daneshyari.com/en/article/8537594>

Download Persian Version:

<https://daneshyari.com/article/8537594>

[Daneshyari.com](https://daneshyari.com)