Leukocyte functions are altered in patients with depressive disorder

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Although there is some research showing an association between depression and an altered immune system, studies of important functions of three relevant immune cells such as phagocytes (neutrophils), lymphocytes and NKcells frommen and women suffering depressive disorders, in comparison with age-matched healthy subjects (controls), have not been performed. In the present work we have analyzed in peripheral blood neutrophils, lymphocytes and NK cells from 20 patients (52±10 year-old) with depression determined by the Beck Depression Inventory (BDI) and from 25 controls the following functions: adherence to endothelium, chemotaxis, phagocytosis of neutrophils, superoxide anion levels, lymphopropiferative response to mitogens and NK activity. Our results show that the chemotaxis in both neutrophils and lymphocytes, phagocytosis, lymphoproliferative response and NK activity of cells from subjects suffering depression are significantly decreased with respect to those functions in the controls. However, the adherence and superoxide levels are increased. These data seem to indicate that patients with depression may be more susceptible to infections, and since the increased adherence and superoxide levels are related to an oxidative stress situation, these results also support the oxidation-inflammation basis of the depression disorders. (Journal of Neuroimmunology 197 (2008) 159–176)
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LEUKOCYTE FUNCTIONS ARE ALTERED IN PATIENTS WITH DEPRESSIVE DISORDER

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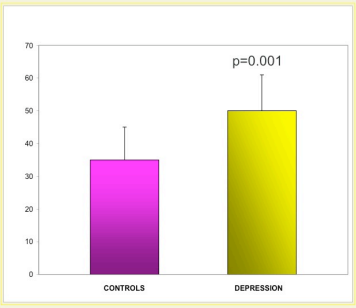
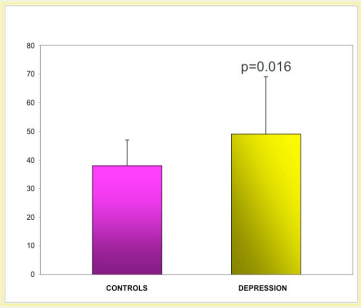
ADHERENCE TO ENDOTHELIUM

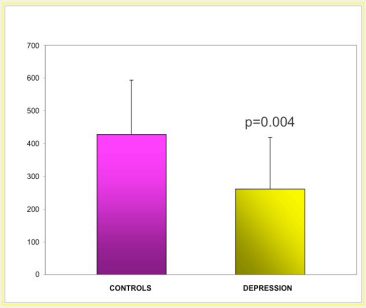


LYMPHOCYTES



NEUTROPHYLS

CHEMOTAXIS



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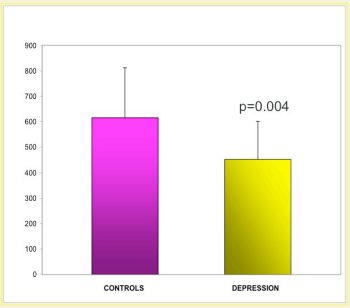
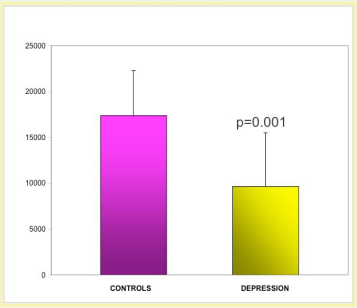
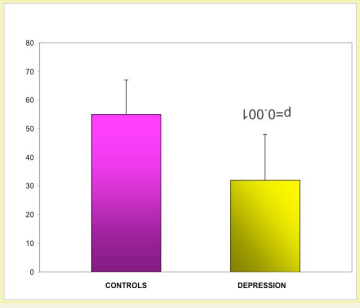


NEUTROPHYLS

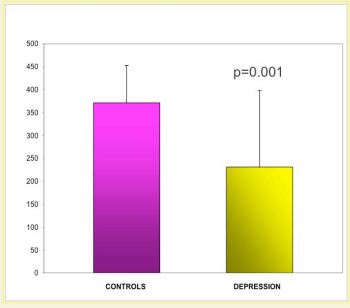
LYMPHOPROLIFERATION



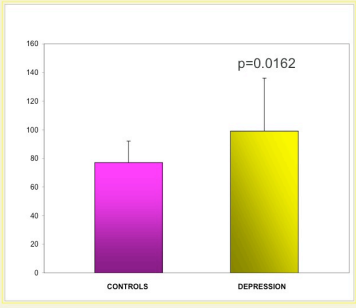
NK ACTIVITY



PHAGOCYTOSIS



SUPEROXIDE ANION LEVELS



CONCLUSIONS

The results show that the chemotaxis in both neutrophils and lymphocytes, the phagocytosis, the lymphoproliferative response and the NK activity of cells from subjects suffering depression are significantly decreased with respect to those functions in the controls. However, the adherence and the superoxide levels are increased. These data seem to indicate that patients with depression may be more susceptible to infections, and since the increased adherence and superoxide levels are related to an oxidative stress situation, these results also support the oxidation-inflammation basis of the depression disorders.

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