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DYSFUNCTIONAL RESPONSE OF MONOCYTES/MACROPHAGES IN LATE-STAGE BIPOLAR DISORDER

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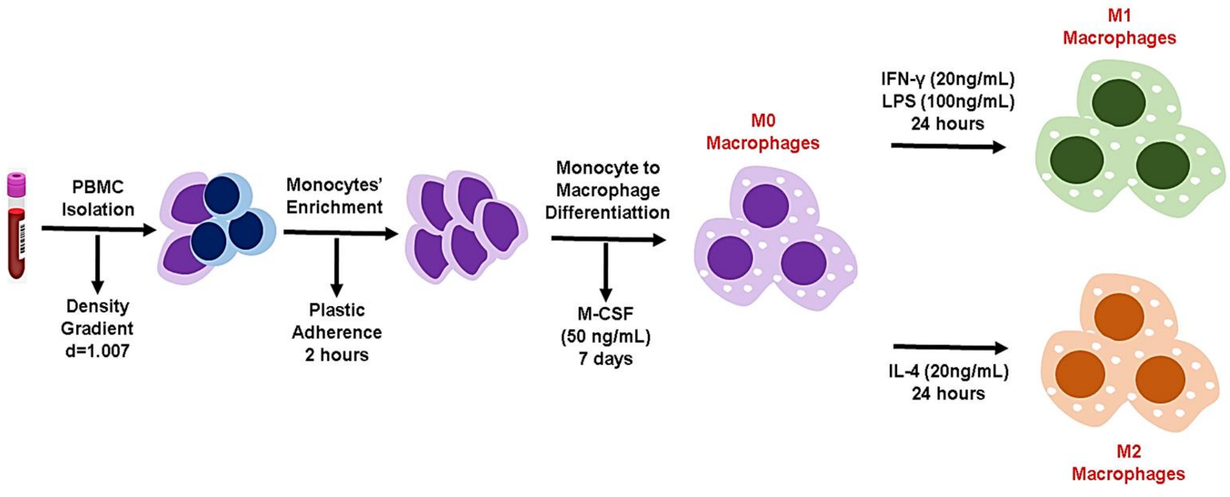
INTRODUCTION

Peripheral cytokines levels are abnormal in patients with bipolar disorder. Thus, we evaluated the pattern of macrophages polarization, classic (M1) or alternative (M2), and how this pattern changes from early to late stages of BD.

METHODS

Patients with bipolar disorder (n=20) according to DSM-5 and in remission period were recruited from Bipolar Disorders Program. They were classified into early and late stages based on functional status criteria. The control group (n=10) consisted of healthy volunteers. Mononuclear cells were collected from the interphase of peripheral blood obtained from all participants and then isolated as in the scheme below:



After 24 hours, supernatants were collected and cytokines (IL-1β, IL-6, IL-10 and TNF-α) were measured, and phagocytosis functionality of M0, M1 and M2 was analyzed.

CONCLUSION

Our findings point to a dysfunction in the innate immune compartment of BD patients in the late stages of illness. We hypothesize that persistent microenvironmental and systemic changes that occur during the progression of the disease, might promote exhaustion of the immune system. In this regard, it is plausible to speculate that this failure of the immune system may contribute to structural and neurocognitive changes commonly observed in the advanced stages of the illness.

RESULTS

No demographic differences were found among the three groups. The Kruskal-Wallis test revealed significant differences between three groups in the secretion of cytokines, as show in figure 1. In phagocytosis assay, we observed an alteration in macrophages functionality, as demonstrate in figure 2.

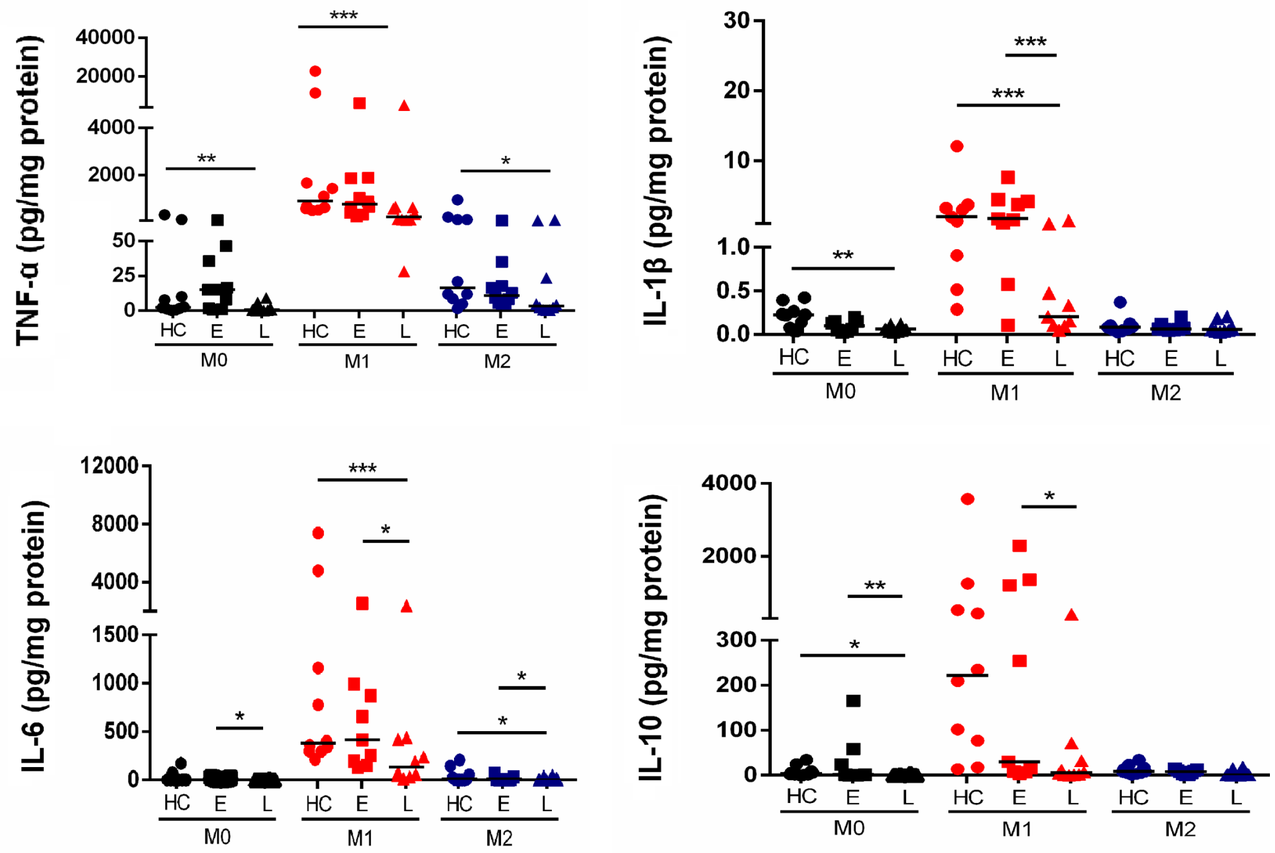


Fig 1. Cytokines secretions from M0, M1 and M2 from healthy controls (HC, n=10), early (E, n=9) and late (L, n=9). Significant differences were considered when $p<0.05$ (*), $p<0.01$ (**) or $p<0.0001$ (***).

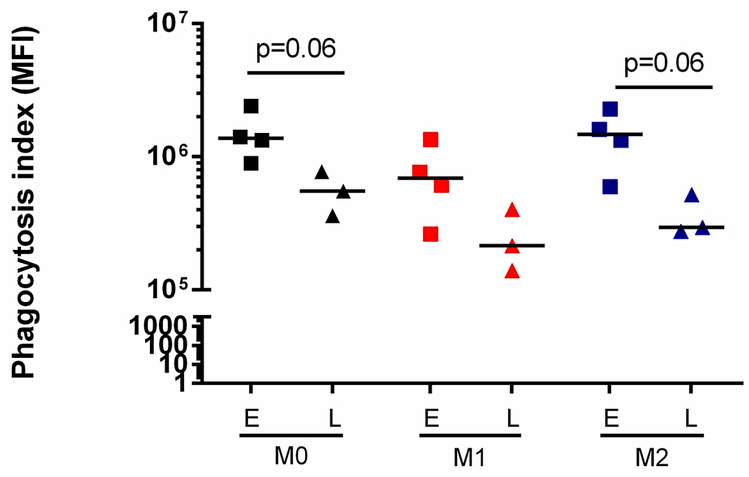


Fig 2. Phagocytic activity of M0, M1 and M2 macrophages from early (E, n=4) and late (L, n=3) bipolar disorder patients.

ACKNOWLEDGEMENTS

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