CEREBROSPINAL FLUID INFLAMMATORY BIOMARKERS DIFFERENTIATE DEPRESSED AND NON-DEPRESSED PERSONS BETTER THAN BLOOD BIOMARKERS

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Introduction

Altered inflammation plays a role in the pathophysiology of MDD. In MDD, inflammation has been assessed almost exclusively in plasma even though MDD is a disorder of the central nervous system (CNS). Moreover, the functioning of inflammatory cytokines and chemokines is regionally specific, exerting different effects in the CNS than the periphery.

Result

- 1 CSF inflammatory markers are elevated in patients with MDD
- 2 Plasma inflammatory markers are not elevated in MDD

Conclusion

CSF rather than plasma inflammatory markers are elevated in MDD

Objective

Investigate whether abnormalities in inflammation in major depressive disorder (MDD) are more apparent in cerebrospinal fluid (CSF) than in plasma.

Method

Fourteen patients with major depression and 14 healthy, age- and gender-matched controls were included. Psychiatric screening was performed with the MINI followed by examination by a senior psychiatrist. Fasting morning blood and CSF samples were collected. Plasma and CSF were assayed for levels of VCAM-1, IFN-g, IL-6 and TNF-a using a custom Mesoscale multiplex kit. Data were trimmed of outliers and instances of high test-retest variability and then compared between groups using *t*-tests (two-tailed).

Results

No statistically reliable differences in VCAM-1, IFN-g, IL-6, and TNF-a were observed between groups in the blood. In CSF, we found higher levels of IFN-g, and TNF-a, and marginally higher levels of VCAM-1 in MDD; no between-groups difference in CSF IL-6 was observed. Average Cohen's *d* effect size = 0.27 for plasma and 1.18 for CSF.

Conclusions

Conclusions: CSF- more than plasma-based assays identified abnormal levels of inflammatory biomarkers in MDD. Given these findings and that MDD is considered a disorder of the CNS, further investigation of CNS-level inflammation in MDD is warranted.

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