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Abstract

Association Between CYP2C19*2 Polymorphism and Clinical–Psychosocial Features in Patients with Major Depressive Disorder †

Larissa S. S. Bonasser [1,2,*], Calliandra M. de Souza Silva [2], Caroline F. Fratelli [2], Alexandre S. R. Pereira [2], Daniel O. Freire [2], Elias L. B. Cavalcante [2], Guilherme O. Rodrigues [2], Joanilson C. M. dos Santos, Jr. [2], Livia C. L. de S. Barreto [1] and Izabel C. R. da Silva [1,2]

[1] Postgraduate Program in Health Sciences, University of Brasília, UnB, Brasília 70910-900, Brazil; liviabarretofarm@hotmail.com (L.C.L.d.S.B.); belbiomedica@gmail.com (I.C.R.d.S.)
[2] Clinical Analysis Laboratory, Faculty of Health Sciences and Technologies, University of Brasília, UnB, Brasília 72220-275, Brazil; cdssilva@gmail.com (C.M.d.S.S.); carolfratelli@gmail.com (C.F.F.); prof.alexandresampaio@gmail.com (A.S.R.P.); daniel.microbiologia@gmail.com (D.O.F.); eliasluizbatista@gmail.com (E.L.B.C.); guilhermerodriguesolv@gmail.com (G.O.R.); joanilson.cabral@hotmail.com (J.C.M.d.S.J.)
* Correspondence: laribonasser@gmail.com
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Introduction: The *CYP2C19*2* allele is associated with reduced enzymatic activity and elevated scores in the personality trait "harm avoidance," reflecting increased anticipatory worry and social shyness. This pilot observational study aimed to investigate the frequency of the *CYP2C19*2* polymorphism and its association with clinical characteristics in patients with major depressive disorder (MDD) treated at UBS 17 (Planaltina-DF) and UBS 3 (Samambaia-DF). Methodology: Approved by CEP-FEPECS and CONEP ethics committees (CAAE nº 22434819.0.0000.8093), the study collected blood from adult MDD patients (both sexes) for biochemical and genetic analysis. The extracted DNA was genotyped using PCR-RFLP with the *SmaI* enzyme. Statistical analyses were conducted using SPSS v.28, with a 5% significance level. Results: No significant differences were found between GG and GA+AA genotypes for most clinical parameters (e.g., hemoglobin $p = 0.179$; hematocrit p = 0.062; HbA1c $p = 0.091$). However, a significant difference was observed in the WHOQOL-bref domain III (social relationships, $p = 0.033$), suggesting a genetic influence on psychosocial aspects. Chi-square tests confirmed no association between the polymorphism and sociodemographic variables or psychotropic use ($p > 0.05$). Conclusion: These findings suggest that *CYP2C19*2* polymorphism may contribute to the modulation of social aspects of MDD patients' quality of life, even in the absence of overt clinical changes, highlighting the importance of integrating genetic markers into personalized mental health care. Nonetheless, the small sample size and cross-sectional design restrict generalizability and causal inference, warranting further longitudinal studies.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

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