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NEUROTRANSMITTERS RELATED TO DEPRESSION AND PSYCHOSIS IN PATIENTS WITH TEMPORAL LOBE EPILEPSY

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Introduction: Epilepsy affects between 1 and 2% of the world population. Drug refractoriness is common and about 40% of patients suffer from psychiatric disorders.

Objective: Knowing noradrenaline, dopamine, serotonin and substance P receptors' role in hippocampi removed from people with temporal lobe epilepsy (TLE) with or without psychiatric comorbidity.

Aims: To assess whether there are differences in different neurotransmitters' roles in TLE with or without psychiatric comorbidity.

Method: TacMan real-time PCR assay to quantify the receptors' mRNA in 48 TLE patients without (Epilepsy-24) or with psychosis (Psychosis-10) or depression (Depression-14) and 8 necropsies (Controls).

Results: AD2A and AD2C showed differences and more expression in the Epilepsy group when compared with Control and Psychosis. AD2A showed significance in the Antiepileptic variable, a substance that activates AD2A in the hippocampus. AD2A and AD2C without difference for Epilepsy and Depression indicate a two-way relation or common pathogenesis between these illnesses; and their minor expression in the Psychosis group suggests different adrenergic mechanisms connected with psychosis and epilepsy. D2 showed a significant difference in the Psychiatric Diagnosis Subtype and Epileptic Seizures frequency, probably due to chronicity and number of depressive episodes. The role of 5-HT2A in TLE is indicated by its greater expression in the Epilepsy group when compared with the Control, with significance for the Epileptic Seizures frequency. No significant results were found for D4, 5-HT1A, 5-HT2C and NK1.

Conclusion: Prospective research with complementary methods (immunohistochemistry, in situ hybridization, electronic microscopy and neuroimaging) is suggested to identify, locate and visualize the receptors' distribution.