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BLOOD POLYAMINE LEVELS IN DRUG-FREE SCHIZOPHRENICS

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Background: Natural polyamines (putrescine, spermidine and spermine) are low molecular weight highly protonated aliphatic molecules that physiologically modulate NMDA, AMPA/kainate glutamatergic receptors and limbic dopaminergic neurotransmission.

Previous studies had demonstrated that polyamine metabolism might be disrupted in schizophrenia, what could potentially be linked to glutamatergic dysfunction. In particular, polyamine levels in blood and fibroblast cultures from patients with schizophrenia had previously been found to be higher than in healthy controls. Indeed, a significant positive correlation between blood polyamine levels and severity of illness may exist.

Methods: In order to test potential differences in blood polyamine levels between drug-free schizophrenia in-patients (n=12), and healthy controls (n=26, blood donors), spermidine (spd), spermine (spm), and spermidine/spermine index (spd/spm) were determined using HPLC after dansylation.

Results: No significant differences were found between groups (t=0,974; df=36;P=0,337 for spd, t=0,52;df=36;P=0,959 for Spm, and , t=0,662;df=36;P=0,512 for spd/spm).

Conclusions: Though we couldn't replicate previous findings suggesting disturbances in blood polyamine levels in schizophrenia, this issue may be a promising target. Future research should take into account possible factors such as sex, nutritional state, and stress.