

Poster presentation

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Plasma homocysteine, folate and vitamin B12 levels in psychiatric patients: preliminary data

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from International Society on Brain and Behaviour: 2nd International Congress on Brain and Behaviour Thessaloniki, Greece. 17–20 November 2005

Published: 28 February 2006

Annals of General Psychiatry 2006, **5**(Suppl 1):S146 doi:10.1186/1744-859X-5-S1-S146

Background

Plasma total homocysteine levels have been related to several psychiatric disorders and mild to moderate hyperhomocysteinemia has been reported by some researchers to be present in schizophrenia. The origin of elevated plasma homocysteine in schizophrenia remains unclear (life style, pathophysiology of the illness). Data suggest that B12 deficiency can also lead to the development of psychiatric features (usually dementia, occasionally depression, or, rarely, psychosis), often in the absence of anemia or neurological features. The total plasma homocysteine level is considered to be a sensitive measure of functional folate and vitamin B12 deficiency.

Materials and methods

This study is a part of an ongoing survey aiming at the investigation of differences in plasma total homocysteine, folate and B12 levels between patients admitted to a psychiatric hospital and healthy controls. Plasma total homocysteine, folate and vitamin B12 were measured in 89 patients (male = 66, female = 23) admitted to the D' Acute Ward of the Psychiatric Hospital of Thessaloniki. 78 patients (male = 58, female = 20) with schizophrenia and 11 patients (male = 8, female = 3) with other psychiatric disorders participated the survey. Patients were assessed using MMSE, PANSS and CGI scales. A routine medical evaluation was performed and information regarding smoking, drinking and medication were documented. Patients with Alzheimer's disease, dementia, or megaloblastic anaemia were excluded from the study.

Results

Elevated homocysteine levels were found in the subgroup of the schizophrenic patients -the mean total homocysteine level was 17.31 (SD 7.98) (normal values 3.7–13.9). The mean plasma folate level was 6.11 (SD 2.96) (normal values <5.38) in the same group, and significantly higher in the female subgroup ($p < 0.01$). The mean vitamin B12 level was 341.17 (SD 161.22) (normal values 211–911).

Discussion

The findings of the study are in accordance with the relevant literature which suggest that hyperhomocysteinemia is present in some schizophrenic patients. Whether this is related to the pathophysiology of the illness remains to be seen. Further analysis and comparison with the control group is in progress.

References

1. Applebaum J, Shimon H, Sela BA, Belmaker RH, Levine J: **Homocysteine levels in newly admitted schizophrenic patients.** *Journal of Psychiatric Research* 2004, **38**:413-416.
2. Haan L, Amelsvoort T, Linszen HD: **Elevated homocysteine levels in schizophrenia.** *Am J Psychiatry* 2004, **161**:1131-1132.
3. Levine J, Stahl Z, Sela BA, Gavendo S, Ruderman V, Belmaker R: **Elevated homocysteine levels in young male patients with schizophrenia.** *Am J Psychiatry* 2002, **159**:1790-1792.
4. Susser E, Brown AS, Klonowski E, Allen Rh, Lindenbaum J: **Schizophrenia and impaired homocysteine metabolism: a possible association.** *Biol Psychiatry* 1998, **44**:141-143.