The Nexus between Schizophrenia, Gluten-Sensitivity and Celiac Disease

Sturgeon, Craig [1, 4]; Eaton, William W[2]; Cascella, Nicola [3]; Bhatti, Bushra [1, 4]; Kryszak, Debby [1, 4]; Fasano, Alessio [1, 4]

1. Center for Celiac Research, University of Maryland School of Medicine, Baltimore, MD, USA.
2. Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA.
3. Department of Psychiatry, Johns Hopkins University, School of Medicine, Baltimore, MD, USA.
4. Mucosal Biology Research Center, University of Maryland School of Medicine, Baltimore, MD, USA.

Background: Celiac disease (CD) is an immune-mediated reaction to gluten presenting with abdominal complaints and a range of less common neurological and psychiatric symptoms. Evidence of a link between schizophrenia and CD dates back as far as 1961. A theory suggests that gluten serves as an environmental trigger in individuals predisposed to schizophrenia, which is supported by a series of ecologic data linking a prevalence of schizophrenia with grain consumption.

Aim: To evaluate the prevalence of CD and gluten-sensitivity (GS) in schizophrenic subjects.

Methods: 1419 blood samples of schizophrenic subjects from The National Institute of Mental Health Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) Project were studied. All samples were screened with: tTG-IgA, AGA-IgA & AGA-IgG. All positive tTG-IgA samples were confirmed with EMA.

Results: The serological test combination used to detect CD (EMA+ and/or tTG-IgA+/AGA IgA+) identified 24 positive subjects, suggesting that the prevalence of CD among schizophrenic subjects is double (1:59) when compared to healthy individuals (1:105). Our screening revealed an extremely elevated number of AGA IgA-positive subjects (280) and an unusually low of AGA-IgG positive subjects (6). The number of subjects exclusively positive for AGA-IgA, a potential marker of GS, suggests a high prevalence (1:5) among the CATIE cohort.

Conclusions: These preliminary observations suggest that within the CATIE subjects with schizophrenia there is a mixture of two populations: CD patients (1:59) and GS patients (1:5). Since changes in behavior have been described, we conclude that 1 out of 5 schizophrenic patients in this cohort could potentially benefit from a gluten free diet.