# OC11 - **The bidirectional link between CNS and gut microbiota in epilepsy and other neuropsychiatric disease**

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**Background**: Gut-Brain-Microbiota (GBM) axis, a bidirectional communication pathway between gut bacteria and the central nervous system (CNS), exerts an important influence on key brain processes. Patients with neuropsychiatric disorders often show abnormal intestinal microbiota, according with disease severity.
**Objective**: We evaluated the potential GBM dysfunction in epileptic patients by using the Bristol Stool Test (BST), a commonly used tool to assess stool consistency.
**Methodology**: We enrolled children with epilepsy of different aetiology, including subjects with isolated epilepsy (IE) and associated with neuropsychiatric comorbidities (intellectual disability, autism spectrum disorder, movements disorders) (Epi+). We also included healthy controls. BST, which classify the form of human feces into seven different categories, was collected from each patient. BST scores 1-2 and 5-7 were considered abnormal. Information about gastrointestinal (GI) discomfort (abdominal pain, constipation, diarrhea, reflux, bloating, dyspepsia) were also collected during the interview. Statistical analysis was performed by Fisher's Exact test.
**Results**: Overall, 148 individuals (mean age: 9,4±3,9 SD) were recruited. Patients group included 30 patients with IE and 54 with Epi+. Healthy controls group included 64 individuals (mean age:9,4±3,1 SD). BST scores were abnormal in 31 (37%) patients (5 from IE group and 26 from Epi+). Nine (14%) controls showed abnormal BST scores. BST scores were significantly abnormal in patients compared with the controls (p=.0026) and in patients with Epi+ compared with IE patients (p=.0047). BST scores were comparedbetween IE and Epi+ patients in monotherapy (p=.038). Finally, BST scores were compared between patients with or without GI discomfort (p=.0001).
**Conclusions / Implications for practice**: BST is an easy, cost-free tool to evaluate the intestinal transit and may be a surrogate for indicating potential dysbiosis in epilepsy patients. Epi+ patients show more abnormal BST scores compared with IE patients, supporting the potential role of inflammation in children affected by epilepsy associated with comorbidities. Antiepileptic treatment does not influence the risk for abnormal BST scores. The impact of BST in routine clinical practice needs to be confirmed. Moreover, the relationship between abnormal BST scores and the degree of intestinal dysbiosis should be addressed by further research, including metabolomic studies.