



## ***How the Brain-Gut Axis May Connect Several Cerebro-Intestinal Co-Morbidities: Irritable Bowel Syndrome and Epilepsy as Examples?***

Mina T. Kelleni\*

Department of Pharmacology, Faculty of Medicine, Minia University, Egypt

### **Editorial**

Irritable bowel syndrome (IBS) was shown to be far more frequent in patients with epilepsy compared with that in healthy controls; 16% in patients with epilepsy and 3% in controls [1]. The so-called brain-gut axis has recently been demonstrated to be crucial for the maintenance of cognitive performance and abnormal interaction in this axis has been shown to be one of the relevant pathophysiological mechanisms for the development of IBS [2]. Similarly, Nikiforova in 2014, and after comparing epileptic EEG patterns and colonic contractile electrical complexes, has hypothesized that peripherally organized electrographic patterns associated with stress induced gut symptoms actively participate in creating epileptic susceptibility [3]. Further, in a population-based cohort study of a total of 32,122 patients diagnosed with IBS, it was revealed that IBS, after adjusting for age, sex, diabetes, hypertension, stroke, coronary artery disease, head injury, depression, systemic lupus erythematosus, brain tumor, and antidepressants usage, increases the risk of developing epilepsy [4]. Moreover, colon neoplasm, among other neoplasms, was diagnosed during follow-up examination of patients with initially unknown seizure etiology and it was revealed several months after the first epileptic seizure [5] and the risk of colon cancer, among other neoplasms, was statistically increased in more than 28,000 Finnish patients treated from epilepsy [6]. Interestingly, the prevalence of epilepsy, inflammatory bowel disease, IBS and migraine is increased in multiple sclerosis patients versus the general population [7] and after adjusting for the patients' sex, age and geographic region, patients with panic disorder were more likely to have IBS, among other disorders, compared to patients in the comparison cohort [8]. About two decades ago, Mendler has argued to confirm the establishment of the rare entity of digestive epilepsy connecting IBS to cerebral meningioma and using carbamazepine to control the

associated recurrent paroxysmal abdominal pain [9]. I strongly believe in 2017, one should investigate deeper the obvious reciprocal interaction between brain and gut to elucidate new mechanisms and hopefully to develop new drugs that may simultaneously manage different cerebro-intestinal co-morbidities.

### **Conflict of Interest**

The author declares no conflict of interest.

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\*Corresponding author: Mina T Kelleni, Department of Pharmacology, Faculty of Medicine, Minia University, Egypt, E-mail: [drthabetpharm@yahoo.com](mailto:drthabetpharm@yahoo.com)

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