Abstract Title: A Link Between Migraine, Tension Type Headache and Irritable Bowel Syndrome: Clinical and Genetic Indicators

Press Release Title: Migraine, Tension Headaches and Irritable Bowel Syndrome Linked?

Objective: Our aim was to analyze frequency of irritable bowel syndrome (IBS) in migraine and episodic tension type headache (ETTH) patients; frequency of primary headache disorders in IBS patients; presence of polymorphism in serotonin transporter and serotonin receptor-2A gene to explain possible association between IBS and primary headache disorders.

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Background: Patients with IBS have increased hypothalamic gray matter activity suggesting an association between stress, and hypothalamic-pituitary-adrenal axis. In this perspective IBS can be defined as migraine of the bowels. In IBS patients with constipation serotonin secretion in plasma is being decreased. There is defect in serotonin signaling in IBS and decrease in mucosal serotonin and immune-reactivity of serotonin transporter.

Design/Methods: 107 episodic migraine and 53 ETTH patients, 107 patients with IBS and 53 healthy control subjects were enrolled. Migraine and ETTH patients were examined whether they have IBS symptoms and IBS patients were examined for primary headaches. Presence of polymorphism in serotonin transporter and serotonin receptor 2A gene were assessed.

Results: IBS frequency in migraine patients was found to be two-fold compared with ETTH (54.2% vs 28.3%, p<0.05). Unilaterality and photophobia was more pronounced in migraine patients with IBS. Migraine was found in 38 patients (35.5%) and ETTH was found in 24 patients (22.4%) with IBS. Comparing with control subjects significant difference in terms of 5-HTT VNTR gene 10/12 genotype was observed in migraine patients (p=0.0247). When patients with ETTH and controls were compared there was significant difference in terms of 5-HTT VNTR 10/12 (p=0.0103) and 12/12 (p=0.0043) genotypes. When patients with IBS and controls were compared there was a significant difference in terms of 5-HT2A - 1438 AA genotype (p=0.0005).

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**Conclusion:** Our study suggests a high possibility of phenotypic and genotypic association between the IBS and primary headache disorders and supports the presence of some shared pathophysiological basis.

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