Prevalence of Irritable Bowel Syndrome (IBS), Migraine and Co-existing IBS-migraine in Medical Students

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Introduction

- Irritable bowel syndrome (IBS) is a relapsing functional bowel disorder in which abdominal pain or discomfort is associated with defecation or a change in bowel habit.
- In western countries, the prevalence of IBS is 15-24% in the general population.\(^1\)
- Migraine is a common headache disorder with a lifetime prevalence of 13% in men and 33% in women.\(^2\)
• Irritable bowel syndrome (IBS) and migraine frequently co-exist.

• A meta-analysis showed that overall IBS patients are at risk to have coexisting headache with an estimated OR of 2.7 (CI 2.3–3.1).³
• Stress is a major contributing factor for both.
• The influence of stress on symptom occurrence and severity seems to be associated with hyperactivity of the hypothalamic-pituitary-adrenal axis.
• These pain related disorders apparently share many similarities like recurrent nature, female preponderance, familial association and frequent association with psycho-somatic comorbidities.
Objective

- To evaluate the prevalence of migraine, IBS and co-existing IBS and migraine among medical students.
Materials and Methods

• This cross-sectional questionnaire-based study was conducted among the students of four medical colleges during the period July to December 2013.

• Migraine was defined according to International Headache Society criteria (IHS).

• IBS was defined by both Asian criteria and Rome III criteria.
• Statistical analyses were done using SPSS version 20.0 and the level of significance was set at $P \leq 0.05$.

• Ethical clearance was obtained from appropriate authority.

• Verbal consent was taken after proper explanation.
Results

• A total of 293 students volunteered in the study (male 177, female 116; preclinical 142, clinical 151).

• Fourteen (4.78%, 11 male, 3 female, p=0.175) students met the criteria for IBS with comparable prevalence among preclinical and clinical (4.2% vs. 5.3%, P=0.787) students from both private and government institutions. (2.1% vs. 7.2%, P=0.055).
IBS...

• IBS-D was the most prevalent subtype (n=8, M=6), next common was IBS-M (n=4, M=3).
• Feeling of incomplete evacuation (n=10), frequent motion (n=7), straining (n=7) and bloating (n=7) were more prevalent symptoms besides abdominal pain relieved by defecation (n=11).
• Fifty percent (n=7) IBS subjects consider their bowel habit as normal.
IBS-variants

- IBS-D: 57%
- IBS-M: 29%
- IBS-C: 7%
- IBS-U: 7%
• No significant difference was noted in the different bowel symptoms among male and female IBS subjects.

• 28.6% students with IBS consulted a physician for their bowel problem.
IBS...

• In univariate analysis BMI is significantly less in IBS subjects (P=0.007), but in multivariate analysis students of government institutions were found 2 times more vulnerable to IBS than private institutions (P=0.399).
Migraine...

• Among the 221 (75.4%) students with headache, only 83 (37.6%) had frequent attacks.

• Fifty one (17.4%, 20 male and 31 female, P=0.001) met the IHS criteria for migraine, with comparable prevalence among preclinical and clinical students (16.2% vs. 18.5%, P=0.645).

• Ninety percent (n=46) migraineurs had accompanying aura.
Migraine...

- Common triggers were stress (84.3%), lack of sleep (82.4%), frequent/prolonged travelling (67.3%), changes in weather (74.5%), reading (59%), working with computer (60.2%) and watching TV/listening Radio (55%).
Stress
Lack of sleep
Reading
Fasting
Physical activity
Frequent/prolong travel
Irritant smell
Prolong bathing
Specific food
Migraineurs
Non-migranous headache
Migraine...

- Thirty one (60.2%) migraine patients suffered frequent attacks and 12 (23.52%) had migraine-associated frequent disability.
Migraine...

- In multivariate analysis with sex, family income, BMI, preclinical students and institution, female sex was found as only independent predictor for migraine (OR=3.568, 95% CI =1.555–8.190, P=0.003).
IBS & Migraine

• Headache was highly prevalent in IBS (71.43%) but only two female students with IBS-D (14.3%) had concomitant IBS and migraine.
Discussion

- IBS and migraine affect approximately 10-20% of the general population usually young adults.\(^4\)
- More common in the west than east.
- IBS was reported in migraine patients in periods between the attacks.
Migraine...

- A study conducted among medical students in the University of Lagos, Nigeria showed that prevalence of migraine was 6.4%.\textsuperscript{5}
- Another study found that prevalence has been increased with number of studying years.\textsuperscript{6}
Migraine...

- A study in Benin found that prevalence of migraine in medical students is lower comparing with that of general population.\(^7\)
- The prevalence of migraine in our general population is 26\%.\(^8\)
- In our study, prevalence of migraine was 17.4\%.
• An Iranian study reported a higher prevalence of IBS among medical students (12.6%) than their other sections of general population.\textsuperscript{9}

• Reported prevalence of IBS in our general population varies from 7.7–12.4%.\textsuperscript{10}

• In this study, prevalence of IBS is 4.78%.
IBS and Migraine...

• A study found that 24% of 1,413 migraineurs had IBS, and even 17% of these migraineurs were diagnosed with IBS according to the Rome II criteria.\(^{11}\)

• A study in Korean migraine patients revealed high numbers of functional GI symptoms, of which IBS related symptoms were the most common.\(^{12}\)

• In this study 14.3% subjects had both IBS and migraine.
Limitations of Study

• Sample size was small.
• This was a cross-sectional study, so the cause and effect relationship were not clarified.
• Results could not be generalized as it was done in a specific population.
• Appropriate investigations could not be included.
Conclusion

• IBS and concomitant migraine–IBS prevalence were found to be low in our medical students, but migraine prevalence corresponds to other countries as well as in medical students.

• Further larger studies should be planned to have more in-depth knowledge of migraine and IBS in the student population.
References


