Migraine and obesity: effect modification by gender and stress

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Background

Migraine is the seventh leading cause of years lived with disability. In the context of chronicity, the link between migraine and obesity has been extensively studied. It is unclear whether that association varies by perceived stress and gender, given that migraine is twice as common among women as among men.

Methods

This study is based on the ongoing, general population NutriNet-Santé e-cohort launched in France in 2009. Volunteers aged ≥ 18 y with Internet access are recruited by means of traditional and online strategies. We selected participants who had provided both anthropometric and migraine status self-report data via specifically-elaborated questionnaires. Perceived stress was assessed with Cohen's PSS10 scale. Cross-sectional associations were estimated via gender- and stress-stratified multivariate polytomous logistic regression models.

Results

We studied 32,835 individuals (75% women; mean age = 52 ± 14 y). In the sample, 34% reported no headache, 44% - non-migraine headache, and 22% - migraine with or without aura during one's lifetime. In these groups, obesity was present in 8.6%, 9.9% and 11.6%, and mean PSS10 scores were 19.7, 20.4, and 21.0, respectively. The association between obesity and migraine was significant only among women [OR = 1.5 (95% CI: 1.3 - 1.7) versus OR = 1.2 (95% CI: 0.9 - 1.6) among men]. Likewise, stress as a moderator was significant only among women: among those with higher perceived stress, there was a somewhat stronger association between obesity and migraine compared with their counterparts with lower stress levels.

Conclusions

We found significant gender- and stress-dependent associations between obesity and migraine using a large, heterogeneous sample of adults from the general French population. The results underscore the need for evidence-based strategies for weight loss and stress reduction for female migraineurs that could help reduce the risk of chronicity.

Key messages:

- The link between obesity and migraine is dependent on gender and stress level.
- Needed are evidence-based strategies for weight loss and stress reduction for female migraineurs to reduce risk of chronicity.