

Supplemental Table. 2 Definition of Risk Factors/Predictors.

Author and year	Identified risk factors/predictors	Definitions
Katsarava, 2004	headache frequency 5–9 d (intermediate), headache frequency >10 d (critical), medication overuse.	Patients with a current headache frequency of 5–9 days/month. Patients with a current headache frequency of >10 days/month. Intake any kind of acute headache medication on >10 days/month.
Bigal, 2008	barbiturate compounds, opiates.	Respondents' self-report on use of barbiturate compounds. Respondents' self-report on use opiates.
Ashina, 2012	income, BMI, headache frequency (days/month), migraine symptom score, medication overuse, depression (PHQ-9).	Body mass index (BMI) was calculated using the standard formula based on self-reported height and weight. Monthly headache frequency estimates were obtained by averaging self-reported 3 month frequency values. Migraine symptom severity was obtained from the sum of the seven ICHD-2 migraine-defining features for migraine without aura (unilateral pain, pulsatile pain quality, pain intensity and pain increased by routine physical activity as well as nausea, photophobia, and phonophobia) plus an item assessing visual aura. The primary symptom items are coded to have the following response options: never/rarely (0), less than half the time (1), and half the time or more (2). The visual aura item was coded as no (0) or yes (2). The sum of these items produces the migraine symptom severity score, with values ranging from 0 to 16. Used triptans, opioids, or ergotamine 10 or more days per month, or used simple analgesics 15 or more days per month. The PHQ-9 assesses symptoms and functional impairment over the preceding 2 weeks and contains nine items with four frequency response options (scored as 0, 1, 2, and 3). A sum score is used to categorize participants into four depression categories: none/minimal (0-4), mild (5-9), moderate (10-14), moderately severe (15-19), and severe (20-27). A cut score of 15 was used to define the dichotomous depression variable.
Seferoğlu, 2012	analgesic overuse, triptan overuse, allodynia, hot and spicy diet.	Simple analgesics or any combination of ergotamine, triptans, analgesics opioids on ≥ 15 days/month on a regular basis for > 3 months without overuse of any single class alone. Triptans, opioids, or combination analgesic medications on ≥ 10 days/month on a regular basis for > 3 months. “Pain or any unpleasant sensation on skin-scalp during a migraine attack ”. Hot and spicy food eating habit.

Supplemental Table. 2 (Continued)

Lipton, 2013	headache day, NSAID days, triptan days.	Headache days per month were obtained from self-report of number of days of headache in the past 3 months averaged to a 1 month estimate. NSAID days per month were the reported maximum number of days taking any NSAID obtained in the AMPP acute medication battery. Triptan days per month were the reported maximum number of days taking any triptan obtained in the AMPP acute medication battery.
Özge, 2013	girl, 12 years, headache history of father, headache history of sibling.	12 years old.
Lipton, 2015	poor treatment efficacy, very poor treatment efficacy, annual household income \geq \$50,000, monthly headache day frequency \geq 5 days/month, headache-related disability (MIDAS).	Migraine Treatment Optimization Questionnaire sum scores range from 0 to 8: very poor treatment efficacy (0), poor treatment efficacy (1-5). Migraine Disability Assessment Scale (MIDAS), a 5-item, self-administered questionnaire that assesses days of missed or substantially reduced activity due to headache in the preceding 3 months in 3 domains: schoolwork/paid employment, household work or chores, and nonwork (family, social, and leisure) activities.
Reed, 2015	PFN, headache-related disability (MIDAS), depression (PHQ-9).	PFN was defined by the nausea occurring more than half of the time with headache for 2 consecutive years. A validated self-administered questionnaire consisting of 5 items that assess days of missed activity or substantially reduced activity over the preceding 3 months due to headache. The PHQ-9 is a validated measure of major depressive disorder based on the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition criteria. Each of the 9 items is rated on a 4-point scale that assesses symptoms and functional impairment over the preceding 2 weeks. Depression was coded as a dichotomous variable using a cut score of ≥ 10 which indicated moderate, moderately severe, or severe depressive symptomology.

Supplemental Table 2.- (Continued)

Martin, 2016	asthma,	Asthma was justified if at least two of the following criteria were present in the past 12 months: (1) shortness of breath (SOB) (presence of wheezing or whistling in chest and breathless with wheezing) OR (episode of being awakened by SOB); (2) an attack of asthma; and (3) current asthma medication use.
	monthly headache day frequency,	Monthly headache days were determined by dividing the total number of days with headache in the preceding 3 months.
	medication overuse.	Medication overuse was defined according to ICHD criteria when nonsteroidal anti-inflammatories or simple analgesics were used for ≥ 15 days/month or triptans, ergots or narcotics for ≥ 10 days/month.
Scher, 2017	noncephalic pain locations.	Noncephalic pain data were collected with the Total Pain Index (TPI). The validated TPI assessed pain frequency and intensity in 8 specified body regions (i.e., face, neck or shoulders, back, arms or hands, legs or feet, chest, abdomen or pelvis, other) over the preceding 3 months.
Scher, 2018	men,	A five-item scale for Migraine Disability Assessment assessing missed and reduced productivity days at work, school, or home during the previous three months due to headache. Scores ≥ 11 indicated moderate-to-severe disability (grades III and IV) due to headache.
	age,	
	annual household income \geq \$75,000,	The nine-item Patient Health Questionnaire (PHQ-9) assesses symptoms and functional impairment of the nine diagnostic criteria for depressive disorders in the preceding 2 weeks on a four-point (0-3) scale from 0 (not at all) to 3 (nearly every day). Depression was coded as a dichotomous variable using a cut score ≥ 10 , which indicated moderate (or worse) depressive symptomology.
	5 to <10 headache days/ month (moderate frequency),	
	10 to <15 headache days/month (high frequency),	Was measured using the 12-item Allodynia Symptom Checklist (ASC-12), which rates responses for 12 symptoms as 0 (never or rarely), 1 (<50% of the time), or 2 ($\geq 50\%$ of the time). A score ≥ 3 indicated the presence of allodynia.
	MIDAS grade II (score 6–10),	
	MIDAS III (score 11–20),	
	MIDAS IV (score ≥ 21),	
	depression,	
	allodynia.	

BMI: body mass index, ICHD-2: International Classification of Headache Disorders-II, PHQ-9: Nine-item Patient Health Questionnaire, NSAID: nonsteroidal anti-inflammatory drug, MIDAS: Migraine Disability Assessment Scale, ICHD: International Classification of Headache Disorders, NLFN: no or low frequency nausea, PFN: persistent frequent headache-related nausea.