

Triptan Use as a Function of Cardiovascular Risk. A Population-Based Study

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Introduction

- Triptans are the most widely used acute treatment for migraine headaches, particularly for those who experience headache-related disability^(1,2). Triptans are, however, contraindicated in patients who have had a heart attack or stroke and should not be used in patients with active or silent myocardial ischemia^(3,4).
- Little is known about utilization of acute migraine treatment among migraineurs who present with cardiovascular disease (CVD) or cardiovascular (CV) risk factors.
- Triptans may be less likely to be prescribed among migraineurs with CVD or CV risk factors. Alternatively, the utilization pattern may be influenced by level of migraine-related disability.

Objective:

- To estimate the proportion of individuals using triptan therapy as a function of their CV profile and disease severity. We emphasize that we did not investigate adequacy of care, but rather tried to identify the importance of CV status in determining treatment patterns for migraine, as a first step to identify underserved populations.

Methods:

- As a part of the American Migraine Prevalence and Prevention study (AMPP), we identified migraineurs representative of the U.S. adult population according to the ICHD-2 criteria.
- We asked about medical diagnosis of cardiovascular events, including myocardial infarction, stroke, coronary revascularization, and claudication (e.g., "Did a doctor ever tell you that you had a heart attack?"). We followed the same language, as well as the same established methods of the Women's Health Study (16) and of the Physician's Health Study (17), which validated this method by adjudicating CV events through medical record review.
- In addition to gathering information on established CVD, we obtained information on established risk factors for CVD (e.g. smoking, body mass index, hypertension, etc).
- Proportions of triptan therapy use were estimated for migraineurs with and without CVD and CV risk factors by level of migraine-related disability.
- Our sample consists of 6,102 individuals with migraine.

Results

- Of individuals who met the ICHD-2 case definition for episodic migraine with or without aura in 2008, self-reported medical diagnoses included diabetes (12.6%), hypertension (33.1%) and high cholesterol (32.7%). Smoking was reported by 15.8% (Table 1). Medical diagnosis of myocardial infarction was reported by 4.1% of migraineurs; stroke, by 2.1%; TIA by 3.0%; claudication, by 2.6% (Table 2).
- Compared to individuals without risk factors for CVD, triptans were significantly

Table 1. Risk Factors for Cardiovascular Disease as a Function of Migraine and of Demographic Characteristics Among Persons with Migraine: AMPP 2008 Survey

	Diabete N (%)	Hypertension	High Cholesterol N (%)	Smoking
Diabetes				
Overall	768(12.59%)	2021(33.12%)	1995(32.69%)	962(15.77%)
Male	178(14.81%)	452(37.60%)	463(38.52%)	241(20.05%)
Female	590(12.04%)	1569(32.02%)	1532(31.27%)	721(14.71%)
18-29	8(2.52%)	25(7.89%)	28(8.83%)	54(17.03%)
30-39	60(5.89%)	156(15.32%)	165(16.21%)	163(16.01%)
40-49	164(10.25%)	414(25.88%)	419(26.19%)	291(18.19%)
50-59	284(14.95%)	735(38.68%)	719(37.84%)	302(15.89%)
60-69	252(19.89%)	691(54.54%)	664(52.41%)	152(12.00%)

Table 2. Cardiovascular Events as a Function of Migraine and Demographics

	Heart Attack	TIA	Stroke	Claudication
Overall	249(4.08%)	186(3.05%)	123(2.02%)	157(2.57%)
Male	92(7.65%)	47(3.91%)	25(2.08%)	38(3.16%)
Female	157(3.20%)	139(2.84%)	98(2.00%)	119(2.43%)
18-29	1(0.32%)	3(0.95%)	2(0.63%)	1(0.32%)
30-39	10(0.98%)	11(1.08%)	8(0.79%)	11(1.08%)
40-49	30(1.88%)	24(1.50%)	19(1.19%)	21(1.31%)
50-59	96(5.05%)	72(3.79%)	49(2.58%)	64(3.37%)
60-69	112(8.84%)	76(6.00%)	45(3.55%)	60(4.74%)

less likely to be used in individuals with diabetes (11.5% vs. 18.3%, OR=0.62, 95%CI=0.5-0.76); hypertension (14.8%, OR=0.8, 0.71-0.9) and those who smoked (12.9%, OR=0.7, 0.6-0.83) (Figure 1).

- Similar findings were seen for individuals with established CVD: myocardial infarct (8.5% vs. 18.5%. OR = 0.43, 0.3-0.7), stroke (7%, OR = 0.59, 0.3-0.9) and heart surgery (9.3%, OR=0.52, 0.38-0.71) (Figure 2).

Figure 1. Proportion of Individuals with Migraine Using Triptan Therapy as a Function of Disability and of Risk for Cardiovascular Disorders

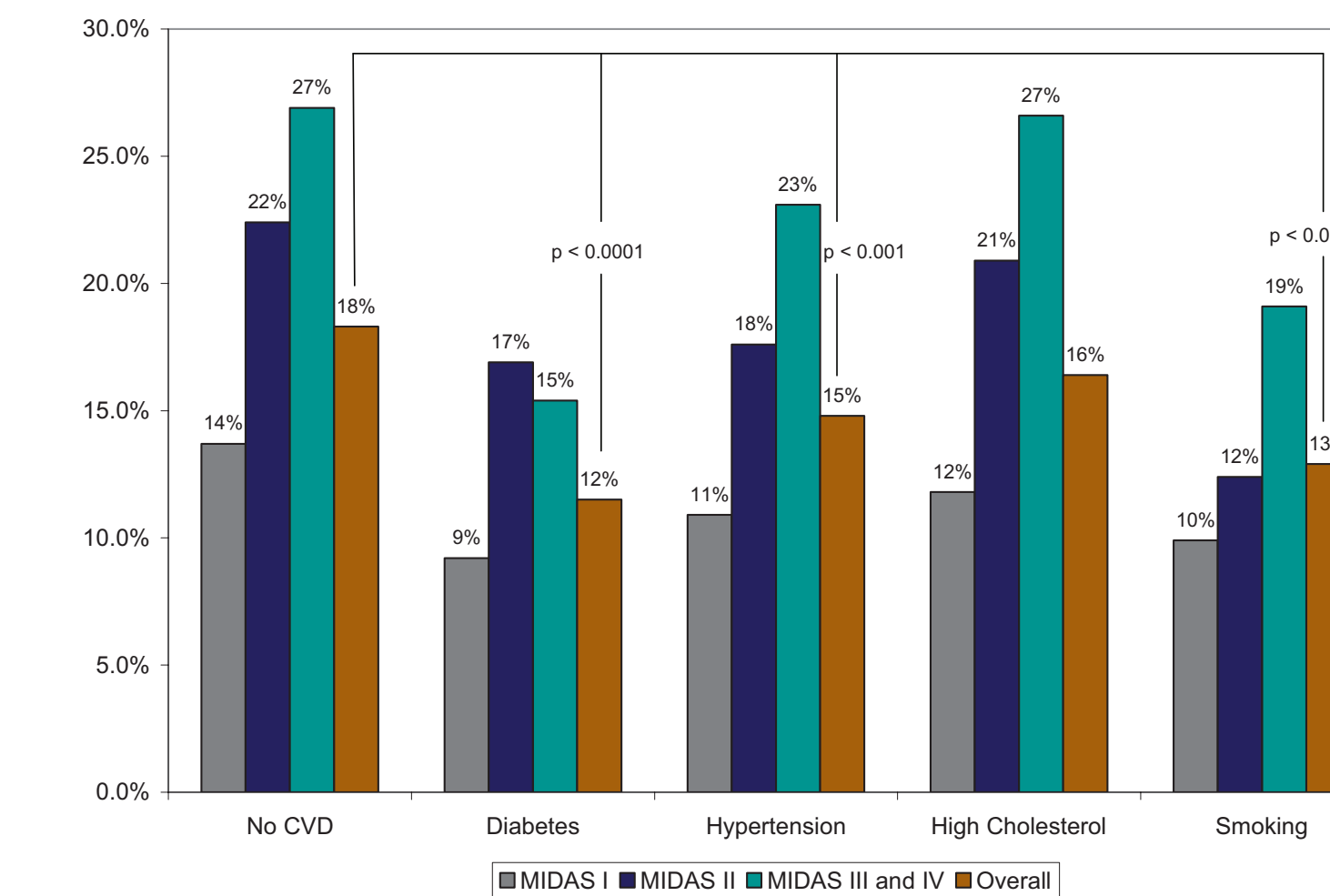
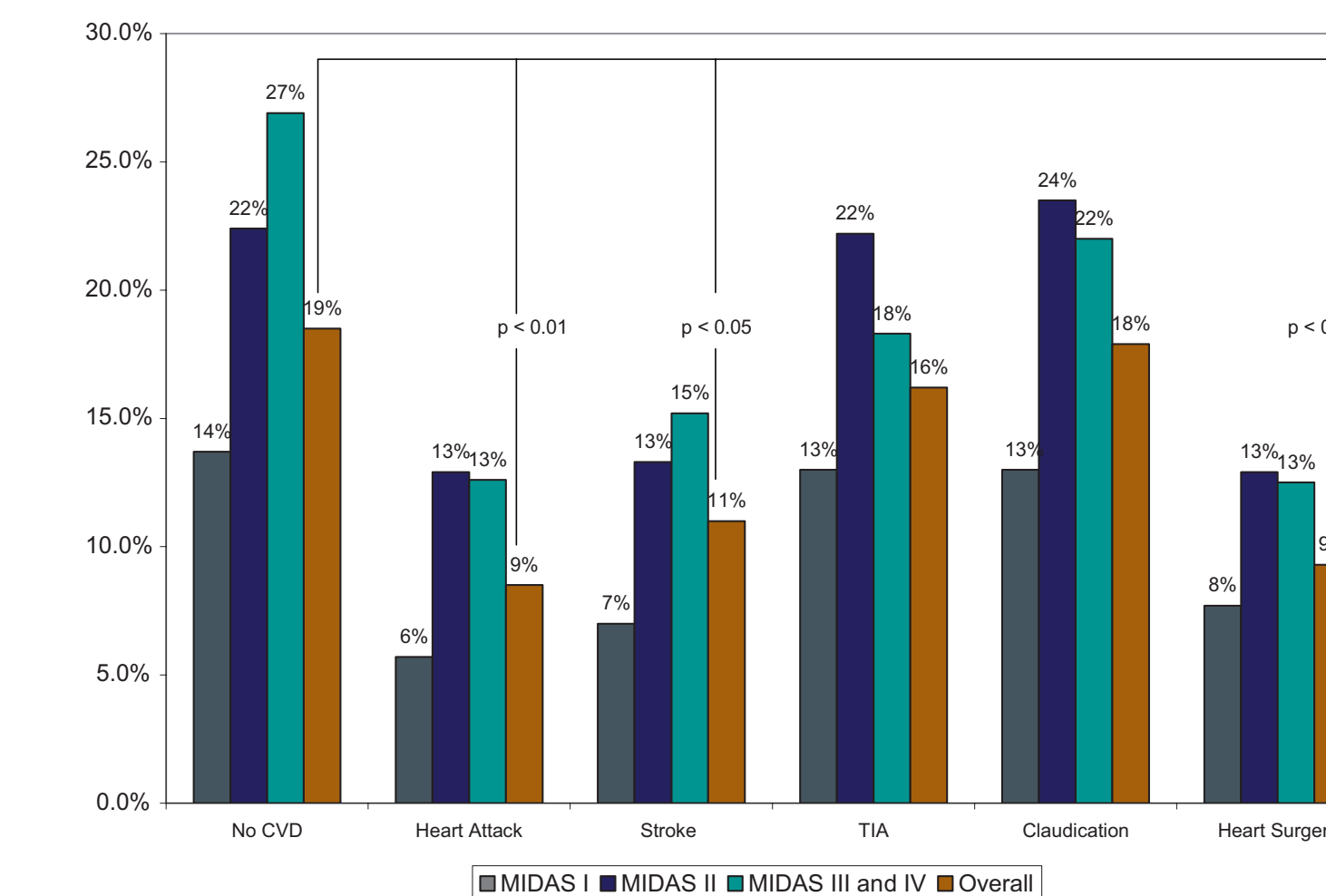


Figure 2. Proportion of individuals with Migraine Using Triptan Therapy as a Function of Disability and of Medical Diagnosis of Cardiovascular Disorders



Conclusions

- CVD and CV risk factors influence triptan use in complex ways.
- Triptan use is lower in those with CVD and CV risk factors, but it increases with headache-related disability, demonstrating an unmet medical need.
- Additional and analytical data are needed on the safety of triptans in the setting of CV risk.
- We emphasize that our study did not assess efficacy or satisfaction with treatment.

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