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A Brief Look at Urgent Care Visits for Migraine: the Care Received and Ideas to Guide Migraine Care in this Proliferating Medical Setting

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Abstract

Objective: There has been a rise in urgent care centers throughout the country over the past ten years, leading to an increase in patients accessing medical care in these locations. These centers advertise an alternative to the Emergency Department (ED) for the evaluation and treatment of urgent medical conditions. The goal of this analysis was to examine the use of urgent care visits for migraine within two urgent care centers within a large academic medical system in New York City. We examined the trends in management and treatment of migraine in these urgent care settings, as well as prescriptions and instructions given to this patient population upon discharge. We paid particular attention to whether the medications administered and prescribed on discharge were those recommended by American Headache Society migraine management guidelines.

Methods: We conducted a retrospective chart review of patients with migraine diagnoses at two different urgent care locations within one large urban medical center. We determined baseline patient demographics, previous migraine characteristics, frequencies of reasons for urgent care visits as well as various medications administered, medications prescribed on discharge, and characteristics of patient outcomes post-discharge.

Results: Of the 78 patients who visited urgent care with a migraine diagnosis, 20 (25.6%) had a known primary care provider within the urgent care centers' healthcare system. More than three-fourths of all patients (78.2%) had a self-reported history of either recurrent headache or migraine prior to the urgent care visit. Of those with a documented frequency of prior headaches, 94.1% (32/34) had episodic migraine and 79.4% (27/34) experienced at most 1-2 headache days per month. Of those presenting to the urgent care during an episode of migraine, 12.3% (9/73) were given intravenous metoclopramide and none were given subcutaneous sumatriptan or intravenous prochlorperazine. Of those with reported nausea or vomiting with their migraine, 46.2% (18/39) received an anti-emetic at the visit and 33.3% (13/39) were given an anti-emetic prescription. Only 11.1% (6/54) of patients who did not have a record of previous triptan use were given a triptan prescription at the urgent care visit.

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Conflict of Interest: Dr. Leslie Miller is the Head of the NYU Langone Health Urgent Care Centers.

Conclusions: The majority of patients in our study who sought medical treatment for migraine in these two urgent care centers were not established patients within the urgent care centers' healthcare system. While 93.6% (73/78) of patients were experiencing current pain upon presentation to the urgent care centers, only 12.3% (9/73) received administration of the medications with the highest level of evidence by the American Headache Society (Level B) for acute migraine treatment in an ED. In addition, the majority of patients with a migraine history presenting to the urgent care setting were not given triptans or anti-emetic prescriptions upon discharge from their urgent care visit. Having these migraine-specific prescriptions may enable improved self-treatment at home should a migraine attack recur.

Keywords

migraine; headache; urgent care; acute migraine care

INTRODUCTION:

Migraine is an extraordinarily prevalent neurological disease, affecting over 36 million Americans¹ and roughly 1 out of every 6 Americans.² According to the World Health Organization, it is the second most disabling illness in the world in disability adjusted life years.³ At least 1.2 million visits to emergency departments (EDs) in the United States can be accounted for by people with migraine annually.

Despite its easy access and therefore widespread use, the ED is a suboptimal place for migraine treatment⁴. The long wait times, high costs, and bright, noisy environment of the ED can greatly exacerbate migraine symptoms. Unnecessary tests are conducted⁵ and many patients are given opioids as treatments for their migraine in the ED.⁴ Most patients with migraine in the ED are not advised to follow-up with an outpatient physician.⁶ Furthermore, most patients have pain after ED discharge, and nearly two-thirds of patients will experience another headache within twenty-four hours of discharge.^{5,7} The ED recidivism rate for patients with migraine is high, with more than a quarter following up with a second ED headache visit in less than six months.⁶

Urgent care centers are emerging as a preferred place for treatment for people with migraine,⁸ perhaps as they are potentially more quiet medical settings where people with migraine might expeditiously receive care. Treatment in the urgent care setting provides significant costs savings for patients when compared to the ED.⁹ Given the limited research about migraine visits to urgent care centers, we sought to conduct a retrospective chart review to examine the frequency of use of urgent care for migraine, migraine management while in urgent care, and follow-up care for migraine within two urgent care centers associated with one of the largest hospital centers in NYC.¹⁰ Specifically, we sought to determine the number of urgent care visits for migraine, the treatments utilized and patient outcomes with treatment during the visit, the medications and instructions given on discharge, patient outcomes post-discharge, and healthcare utilization of these patients within the NYU Langone Health system. We also examined how closely the American Headache Society (AHS)'s recommendations for level B medication administration of anti-

emetic and triptan administration were followed in the treatment of acute migraine in these urgent care settings.

METHODS:

This is a retrospective chart review of patients with migraine diagnoses within the NYU Langone Health System at two different urgent care locations. The study was approved by the Institutional Review Board (IRB) of NYU Langone Medical Center. As this was a retrospective chart review, the IRB waived written informed consent for this study.

Study Setting and Population.

Eligible patients were those who were diagnosed with migraine at either the NYU Langone Medhatten Urgent Care Center between 12/1/2015-12/1/2018 or the NYU Langone Ambulatory Care West Side (ACWS) Urgent Care Center between 4/1/2017-12/1/2018. These dates respectively mark the centers' opening and continued dates of operation as an NYU Urgent Care facility. Exclusion criteria were patients younger than 18 years of age.

The NYU Medhatten Urgent Care Center is open seven days per week and the NYU ACWS Urgent Care Center is open six days per week. Over the course of this retrospective review, the staffing of NYU-Langone urgent care centers consisted of a total of fourteen physicians who completed an accredited Emergency Medicine or Family Medicine residency program, are board certified or eligible, and have had a minimum of two years working in either an urgent care or an emergency department setting. In addition, six physician assistants with a minimum of two years of emergency medicine or urgent care experience also provided care to the patient population under supervision of the attending physicians. All physicians and physician assistants were hired and credentialed through the NYU School of Medicine.

Data Analyses.

The NYU DataCore created a list of patient visits who met the inclusion/exclusion criteria. The following relevant de-identified data were abstracted from Epic and entered into REDCap, a HIPAA compliant database: 1. Baseline demographics. 2. Prior history of headache, headache characteristics, prior migraine abortive and/or preventive medication use based on a pre-specified list of migraine medications, and comorbid conditions. We determined whether patients had a prior history of headache/migraine by reviewing documentation in the medical notes stating patient reported a prior history of headache or migraine, or documentation in Epic of headache or migraine at a prior visit to the healthcare system if the patient was already an established NYU patient. 3. Patients' chief complaints for why they initially came to urgent care. Of note, four patients from our initial dataset were excluded from this analysis. Two patients' urgent care chart notes could not be located in Epic and two patients who were documented as having migraine diagnosis upon being discharged from urgent care did not have any clinical documentation of migraine/headache or associated symptoms.

Results for average age of patients and number of comorbidities are reported as mean with standard deviation. Similarly, the median is reported with interquartile range. Using descriptive analyses, we reported the frequencies of different characteristics of current

headache/migraine as well as the frequencies of various treatment regimens administered at the urgent care visit. Before conducting the analyses, we created a dichotomous variable for patients that received an anti-emetic medication at the urgent care visit versus those who did not. Anti-emetic medications were defined to be either metoclopramide or ondansetron, both through oral or intravenous administration. We then created another dichotomous variable for patients that received an anti-emetic prescription for home use at the visit. Anti-emetic prescriptions were defined to be either metoclopramide or ondansetron. We then compared the frequency of both anti-emetic medication administration at the urgent care visit and anti-emetic prescriptions given out upon discharge between patients that experienced either nausea or vomiting upon arriving to urgent care.

In addition, we created a dichotomous variable for patients who had previously been prescribed a triptan versus patients who had not previously been prescribed a triptan. Patients that had prior triptan use were determined by 1) Self-report of previous triptan use to the physician at the urgent care visit, 2) Self-report of current triptan use before coming to urgent care, or 3) Epic report of past medications prescribed. We also created a dichotomous variable for patients who left the urgent care visit with a triptan prescription versus those who did not. We then compared the frequency of those who received a triptan prescription at the urgent care visit for those patients who were recorded as having been prescribed a triptan previously versus not having been prescribed a triptan previously.

We used descriptive statistics to report the frequencies of healthcare utilization post urgent care visit, both in general and specifically for headache or migraine.

The data was analyzed using SPSS V.25. This is the primary analysis of the data. No statistical power calculation was conducted prior to the study; the sample size was based on the available data.

RESULTS

Patient Demographics

There were 28,474 visits to the Medhatten Urgent Care Center and 3,628 to the ACWS urgent care setting during the study period. During this time, there were 78 patients who were diagnosed with migraine at urgent care. Of these, 93.6% (73/78) visited the Medhatten urgent care location from 12/1/2015-12/1/2018 and the remaining 6.4% (5/78) visited the Ambulatory Care West Side (ACWS) location from 4/1/2017-12/1/2018. The vast majority, 79.5% (62/78) were female. The mean age was 32.5 years (SD: 8.1). As seen in Table 1, 25.6% (20/78) of participants had a known NYU primary care provider.

Patients' Headache and Migraine Histories

The patients' headache and migraine histories are presented in Table 2. Out of the 78 patients who visited urgent care, 78.2% had a self reported or documented history of either headache or migraine, and more than half of patients (67.9%, 53/78) had a documented history of migraine specifically. Less than half of all patients (44.3%) with a history of headache or migraine had previously seen a doctor for treatment for their headaches, with

22.2% (6/27) having previously seen a provider at NYU. Only 2.6% (2/78) were recorded as having previously gone to the ED for headache/migraine.

Of those with a recorded frequency of prior headaches, the vast majority (79.4%, 27/34) experienced at most 1-2 headache days per month. However, 86.9% of charts did not specify the pain severity of previous headaches. There was associated nausea in 36.1% (22/61) of patients with a documented history of headache or migraine. Prior use of migraine abortive medications was recorded by 72.1% (44/61) of patients with previous headache/migraine. NSAIDs (39.3%, 24/61) and triptans (37.7%, 23/61) were the most widely used abortive medications. About one fifth (19.7%, 12/61) indicated prior use of migraine preventative medications.

The Urgent Care Visit: Reason for Presenting and Current Migraine or Headache Characteristics

The reasons for presenting to urgent care are listed in Table 3. The vast majority, 93.6% (73/78), were actively experiencing a variation of head pain upon arrival to urgent care. The most common reason for coming to urgent care was a chief complaint of an ongoing migraine (53.8% , 42/78), followed by a chief complaint of an ongoing headache (25.6%, 20/78). Participants could have more than one chief complaint.

Table 4 shows the characteristics of migraine or headache at the urgent care visit, as well as the treatment implemented at the visit. More than half (56.2%, 41/73) of patients visited urgent care within 72 hours after the onset of their current pain episode. The vast majority of the charts (79.5%, 58/73) did not report pain assessments using the Numeric Rating Scale, and even more, 88.9% (65/73), did not record the pain as mild, moderate, or severe. A little more than half (53.4%, 39/73) had either documented nausea, vomiting, or both that accompanied their headache or migraine. Close to two thirds (64.4%, 47/73) reported taking at least one medication before arriving to urgent care.

Work-Up Ordered by the Urgent Care Provider

No patients were referred for head imaging at the urgent care visit and of those presenting in pain, few patients (6.8%, 5/73) received lab testing.

Medications Administered in Urgent Care and Prescribed on Discharge from Urgent Care

Of those presenting with pain, less than half (46.6%) were given medication. Table 4 shows the medications administered at the visit. Ketorolac injection was the most common medication administered (70.6%). Table 4 also shows the prescriptions given on discharge from urgent care. The majority of all patients (78.2%, 61/78) were given prescriptions at the visit, and 25.6% (20/78) received a triptan prescription.

Table 5 demonstrates whether those experiencing nausea or vomiting at the visit received an anti-emetic and whether they were prescribed a triptan. Table 6 demonstrates whether those who were previously triptan naïve (or not) were prescribed a triptan.

Follow-Up Recommendations and Healthcare Utilization Usage Post the Urgent Care Visit

As seen in Table 4, 60.3% (N = 47/78) of all patients were told to follow up with a neurologist upon discharge. Of those given the recommendation, 40.4% (19/47) followed with a NYU neurologist post the urgent care visit. Twenty (27.4%) of the charts recorded improvement in the patients' headache/migraine after the visit—the rest did not specify.

Table 7 shows both general and headache healthcare usage following the urgent care visit. Almost half, 46.2% (36/78), visited a specialty within the NYU healthcare system post urgent care visit specifically for their headache. Most patients, 69.4% (25/36), followed up with neurology post urgent care visit, independent of whether they were referred to neurology by the urgent care provider or not. Revisits to urgent care following their index visit were made by 11.5% (9/78) patients, with 6 experiencing a current migraine on revisit, 1 experiencing a current headache, and 2 requesting a prescription refill.

DISCUSSION

In this detailed retrospective chart review of patients with migraine diagnoses that visited urgent care within one urban healthcare system, we had a few key findings. First, patients in this study appeared to be using the urgent care centers specifically for *acute care*. The majority of patients were not established patients in our hospital's healthcare system, and fewer than half followed up in the same healthcare system following the urgent care visit. Furthermore, the patients generally had infrequent headaches and the majority would not have qualified for migraine preventive treatment. A second key finding was that management of the acute migraine attacks appeared suboptimal. The documentation provided in the EMR by clinical providers suggests that there was undertreatment of the pain and nausea/vomiting associated with migraine both during the visit and upon discharge. Furthermore, acute treatment for migraine at urgent care visits was not consistent with the recommended AHS ED guidelines.

Urgent Care Centers Used for Acute Care

Our study revealed that the majority of patients visiting the two urgent care centers did not have a known NYU primary care provider and were not “plugged into” the NYU Langone Healthcare system. This suggests that these patients were coming to urgent care hoping to receive acute care for their current pain episode outside of their ongoing primary care. This is supported by the fact that urgent care centers are now gaining overwhelming acceptance as credible alternative for medical treatment for acute care, even potentially replacing primary care for acute complaints.¹¹ A recent study showed a 119% increase in urgent care visits for the treatment of low-acuity conditions since 2008.¹² We found that nearly half (46.2%) of the patients followed up within our healthcare system. Only 40.4% attended a Neurology appointment within our healthcare system for the post urgent care visit. This is despite the fact that more than half of the patients (60.3%) were referred to Neurology, and 74.5% of these patients were considered new patients to neurology. Only one patient was specifically referred to a headache center even though the institution has a headache center.

In our study, the majority of people (94.1%) who visited urgent care appeared to have episodic migraine. Our findings are consistent with the MAST study—a previous longitudinal, internet-based panel study of US adults with migraine that found that 81.3% of patients who visited either the ED or urgent care within the past 6 months experienced episodic migraine rather than chronic migraine.¹³ In our sample, 20.5% (7/34) had documentation indicating four or more attacks per month. Thus, according to the guidelines set by the American Academy of Neurology, it is likely that the vast majority of patients would not qualify for migraine preventative medication.¹⁴ This also supports the idea that urgent care centers might prioritize optimizing acute migraine treatments over preventative treatments.

Migraine Management in Urgent Care and Post-urgent Care

While 93.6% of patients were presenting to urgent care complaining of an acute issue-head pain, there were limited pain assessments recorded. Nearly 90% of patients did not have a pain score as recorded as mild/moderate/severe and nearly 80% did not have a pain assessment as recorded on a 1-10 numeric rating scale. As pain is declared to be the fifth vital sign,¹⁵ evaluation of pain should be routine in urgent care visits and is a requirement to adequately provide proper patient care. Despite not having the data for most patients on pain intensity, we posit that the majority of patients likely had moderate to severe migraine attacks prompting their urgent care visit.

Interestingly, no head imaging was ordered by the urgent care providers for the patients in this study. This is in contrast to studies indicating that up to 51% of head computerized tomographies (CTs) were ordered in patients who presented to the ED with headache¹⁶ even though nearly 95% come back with no pathology.¹⁷ This finding suggests that urgent care providers may actually be more selective than ED providers in utilizing healthcare resources. However, the reasons behind this deserve further explanation.

Treatment in the urgent care centers was not consistent with the AHS guidelines for the management of acute migraine in the ED. The three Level B “should offer” medications for acute management of migraine of patients who present to the ED are intravenous metoclopramide, intravenous prochlorperazine, and subcutaneous sumatriptan.¹⁸ None of these patients were given subcutaneous sumatriptan or intravenous prochlorperazine for acute migraine treatment; in fact, neither medication was available in the urgent care pharmacy. Of the level B migraine medications, only metoclopramide IV was in the pharmacy, and only 12.3% were given this at their urgent care visit. There was also likely under-treatment of nausea/vomiting; despite 39 patients with recorded nausea or vomiting with their migraine, less than half (46.2%) received an anti-emetic at the visit.

In addition, our study also found that few patients were given prescriptions on discharge. Despite triptans being well established as effective migraine treatment for moderate to severe attacks,^{19,20} only 11.1% (6/54) of the patients who were not documented to have prior triptan use were prescribed a triptan at their urgent care visit. Of note, there were 3 patients in our study who reported having hypertension, which may have excluded them from triptan use if their hypertension was not controlled. There were no other clear contraindications to triptan use present in our patient population, including prior myocardial

infarctions or stroke. In addition to the under-utilization of triptans, there was also under-utilization of anti-emetics; despite 39 patients with recorded nausea or vomiting with their migraine, only 33.3% were given an anti-emetic prescription.

Issues for Discussion as Urgent Care Centers Continue to Proliferate and Gain Acceptance as an Alternative to the ED for Acute Medical Management

Our study findings raise the question as to whether the patients with migraine in the urgent care setting should be managed similarly to the ED, and whether the AHS guidelines for ED should be revisited and applied to urgent care. The study also raises the question as to which medications should be kept in the urgent care pharmacies, as urgent care pharmacies may not be large due to space constraints. Urgent care providers might partner with headache specialists/neurologists in order to standardize screening tools and medication protocol for migraine, as well as to ensure that the urgent care pharmacies are properly stocked with the most effective/appropriate acute migraine medications. To improve the standardization of migraine care, perhaps urgent care providers could use the migraine action plan (MAP) or a modified version of the MAP.²¹

Strengths.—Our study has a number of strengths. Although previous studies have examined migraine visits to the ED, to our knowledge, there are currently no studies that have examined migraine visits to urgent care centers specifically. Given the very limited research in this field, this study can be used to spark discussion in the headache community as to the best role urgent care centers can play in acute migraine management and could be used as a stepping stone to conduct larger and more expansive studies in the future. Unlike data claim studies, this retrospective chart review allowed us to thoroughly review patients' reasons for coming to urgent care, the specifics of how patients were managed and treated at the visit, and examine the recommendations for follow-up provided by urgent care providers.

Limitations.—Our study also had some limitations. The study was conducted in a single academic healthcare system in a large urban city which may limit generalizability. We restricted our study to those with a migraine diagnosis. This was done to assess the treatment of those that providers identified as migraine. It may be that many more patients have migraine, but were not given a specific diagnosis. Also, diagnoses of migraine were determined by these urgent care physicians or by patient report and may not be based on the International Classification of Headache Disorders (ICHD)-3 beta criteria.

Given the nature of a retrospective review, there was missing data on the details of the headache histories, headache frequencies, and associated symptoms. In addition, the revisit rate may be an under-estimate as the same patients could have visited other urgent care centers unaffiliated with our institution. Similarly, patients could have followed-up with a neurologist or headache specialist unaffiliated with our institution after their urgent care visit.

Future Directions.—As this study took place within a single academic healthcare system, future studies should be bigger and more expansive in looking at headache and migraine visits and revisits in urgent care centers across multiple locations in the United States.

Studies might also compare treatment regimens of these urgent care centers to see if they adhere to expert recommendations. As mentioned above, to improve the standardization of migraine care, perhaps urgent care providers could use the migraine action plan (MAP) or a modified version²¹ Prior research has already shown the need for better communication and consistency between headache specialists/neurologists and acute care physicians for the optimization of acute migraine treatment.²² We suggest that a system be developed to ensure adequate follow up of urgent care visits.

Conclusions.—We found that the majority of migraine patients in this study are utilizing urgent care centers to seek out acute headache management and not chronic long-term migraine headache management. These patients with migraine that are visiting urgent care centers are likely seeking out acute treatment for migraine relief. However, these patients are not getting the recommended acute migraine-specific treatment per the AHS ED management for acute migraine guidelines. Improvements in acute treatment of migraine in urgent care settings could potentially reduce the economic burden of the disease and keep patients out of the ED. We hope that these findings lead to a discussion amongst the headache community and urgent care providers about how to best provide treatment to patients with migraine at urgent care settings. In order to enhance migraine and headache diagnoses and treatment in urgent care centers, there needs to be better communication between urgent care providers, headache specialists, neurologists, and primary care physicians. Only then will we be able to ensure that patients are receiving optimal treatment for acute migraine attacks in urgent care settings, as well as appropriate long-term rescue medication and outpatient care.

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Table 1.

Patient Demographics

Patients	N = 78
Sex	
Female	62/78 (79.5%)
Age	Mean = 32.50 ± 8.104 [30.67, 34.33] Median = 30.00, IQR = 12
Race	
Asian	8/78 (10.3%)
Black/African American	4/78 (5.1%)
White	44/78 (56.4%)
Other / Unknown	22/78 (28.2%)
Ethnicity	
Hispanic/Latino	2/78 (2.6%)
Not Hispanic/Latino	62/78 (79.5%)
Other/Unknown	14/78 (17.9%)
Patients with known current primary care providers:	43/78 (55.1%)
At NYU:	20/78 (25.6%)
Not at NYU:	16/78 (20.5%)
Unknown:	7/78 (9.0%)
Patients without current primary care providers:	10/78 (12.8%)
Urgent Care Location	
Medhattan	73/78 (93.6%)
ACWS	5/78 (6.4%)

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Table 2.

Medical History

Patient report of past headaches	9/78 (11.5%)
Patient report of past migraine	53/78 (67.9%)
Patients with self-reported previous history of headache/migraine	<i>N</i> = 61 (78.2%)
Patient report having seen a doctor for treatment of previous headaches/migraine	27/61 (44.3%)
Neurology	12/27 (44.4%)
Primary Care Provider	8/27 (29.6%)
Both	2/27 (7.4%)
Frequency of previous headaches	
<u>Documented frequency</u>	34/61 (55.8%)
Daily	1/34 (2.9%)
Every other day	1/34 (12.9%)
1-2x per week	5/34 (14.7%)
1-2x per month	15/34 (44.1%)
1-2x every other month	2/34 (5.9%)
1-2x per year	5/34 (14.7%)
None in the past year	5/34 (14.7%)
<u>Uncertain frequency</u>	27/61 (44.2%)
Other symptoms of previous headaches	
Nausea	22/61 (36.1%)
Vomiting	5/61 (8.2%)
Patients with one or more comorbidities	<i>N</i> = 50 (64.1%)
Mean number of comorbidities	Mean = 1.60 ± 0.926 [1.34, 1.86] Median = 1.00, IQR = 1.00, 2.00
Psychiatric comorbidities	
Depression	7/78 (9.0%)
Anxiety	12/78 (15.4%)
ADHD	5/78 (6.4%)
Overlapping pain conditions	11/78 (14.1%)
Temporomandibular Joint Disorder	1/78 (1.3%)
Irritable Bowel Syndrome	4/78 (5.1%)
Endometriosis	4/78 (5.1%)
Chronic Low Back Pain	2/78 (2.6%)
Prior use of Migraine abortive medications	<i>N</i> = 44/61 (72.1%)
Acetaminophen	7/61 (11.5%)
NSAIDs	24/61 (39.3%)
Excedrin	12/61 (19.7%)
Any triptan	23/61 (37.7%)
Opioids	2/61 (3.3%)
Fioricet	2/61 (3.3%)
Magnesium	1/61 (1.6%)

Ondansetron	1/61 (1.6%)
Anti-psychotics (Promethazine, Compazine)	2/61 (3.3%)
Other/Unable to recall *	5/61 (8.2%)
Prior use of Migraine preventative medications	<i>N</i> = 12 (19.7%)
Beta blockers	5/61 (8.2%)
Tricyclic antidepressants	3/61 (4.9%)
SNRIs	2/61 (3.3%)
Candesartan	1/61 (1.6%)
Riboflavin	1/61 (1.6%)
Magnesium	2/61 (3.3%)
Topiramate	8/61 (13.1%)
Botulinum toxin	2/61 (3.3%)
Gabapentin	1/61 (1.6%)
Other/Unable to recall **	3/61 (4.9%)

* Other prior abortive medications that were named included homeopathic medicines, medicines from different countries

** Other prior preventative medications that were named included steroids

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Table 3.

Reason for Urgent Care Visit

Reason	Number
Patients experiencing pain at visit	<i>N</i> = 73 (93.6%)
Current migraine	42 (53.8%)
Current headache	20 (25.6%)
Requesting medication injection	2 (2.6%)
Requesting prescription refill	4 (5.1%)
Referral from neurologist / PCP	2 (2.6%)
Emesis	5 (6.4%)
Visual issues	8 (10.3%)
Dizziness	9 (11.5%)
Neck pain	3 (3.8%)
Sinus pain	5 (6.4%)
Other*	10 (12.8%)

* Other reasons included tingling, abdominal pain, head injury, concussion, left eyelid drooping, insomnia, fatigue, and an allergic reaction. Besides the two patients with a chief complaint of insomnia and an allergic reaction, all of the other chief complaints were accompanied by another incorporated in this table.

Table 4.

Characteristics and Treatment of Migraine/Headaches at Urgent Care Visit

Patients experiencing pain at visit	N = 73
Onset of current migraine/headache episode	
Within 24 hours of the visit	24/73 (32.9%)
Within 24-72 hours of the visit	17/73 (23.3%)
Over 72+ hours	31/73 (42.5%)
Not specified	1/73 (1.4%)
Other accompanies of headache:	
Nausea	18/73 (24.7%)
Vomiting	5/73 (6.8%)
Both Nausea and vomiting	16/73 (21.9%)
Medications taken before visit:	47/73 (64.4%)
Acetaminophen	7/73 (9.6%)
NSAIDs	24/73 (32.9%)
Excedrin	12/73 (16.4%)
Any triptan	10/73 (13.7%)
Fioricet	1/73 (1.4%)
Topiramate	2/73 (2.7%)
Reglan	1/73 (1.4%)
Other*	10/73 (13.7%)
Medications administered at visit:	34/73 (46.6%)
Ibuprofen oral	5/73 (6.8%)
Ketorolac (Toradol) IM / IV	24/73 (32.9%)
IV fluids (0.9% Sodium Chloride)	6/73 (8.2%)
Metoclopramide (Reglan) oral	2/73 (2.7%)
Metoclopramide (Reglan) IV	9/73 (12.3%)
Ondansetron (Zofran) IV	2/73 (2.7%)
Ondansetron (Zofran) oral	10/73 (13.7%)
Benadryl IV	1/73 (1.4%)
Prescriptions given at visit:	61/78 (78.2%)
NSAIDs (Ibuprofen, Ketorolac)	26/78 (33.3%)
Acetaminophen	4/78 (5.1%)
Metoclopramide (Reglan)	11/78 (14.1%)
Any triptan	20/78 (25.6%)
Topiramate	1/78 (1.3%)
Steroids (Methylprednisolone, dexamethasone, prednisone)	3/78 (3.8%)
Butalbital containing meds (Fioricet, Fiorinal)	12/78 (15.4%)
Ondansetron (Zofran)	9/78 (11.5%)
Opioids	4/78 (5.1%)
Gabapentin	1/78 (1.3%)
Lorazepam (Ativan)	2/78 (2.6%)

Patients experiencing pain at visit	N = 73
Antihistamines	3/78 (3.8%)
Excedrin	2/78 (2.6%)
Propranolol	1/78 (1.3%)
Flonase	1/78 (1.3%)
Valcyclovir	1/78 (1.3%)
Referrals made at visit:	63/78 (80.3%)
Neurology	47/78 (60.3%)
New neurologist	35/47 (74.5%)
PCP	20/78 (25.6%)
Ophthalmology	3/78 (3.8%)
Emergency Department	17/78 (21.8%)
Urgent Care	4/78 (5.1%)
Headache center	1/78 (1.3%)
Concussion center	1/78 (1.3%)

* Other medications taken before visit included OTC medications (Sudafed, Anti-histamines) and homeopathic medications

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Table 5.

Frequency of Patients with Nausea and Vomiting who received an Anti-emetic at Urgent Care Visit

Patients with nausea or vomiting accompanying headache N=39			
	Patients that received anti-emetic medication at visit	Patients that received anti-emetic prescription at visit	Patients that received both
Nausea (18)	5	2	1
Vomiting (5)	3	4	3
Both (16)	10	7	6
Total anti-emetics given	18/39 (46.2%)	13/39 (33.3%)	10/39 (25.6%)

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Table 6.

Patients with previous triptan prescription vs Patients given triptan prescription at visit

	Patients who left with triptan prescription	Patients who didn't leave with triptan prescription
Patients who had previous triptan prescription ($N = 25$)	14/25 (56.0%)	11/25 (44.0%)
Patients with no indication of previous triptan prescription ($N = 53$)	6/53 (11.3%)	47/53 (88.8%)
Total patients ($N = 78$)	20/78 (25.6%)	58/78 (74.4%)

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Table 7.

General and Headache Healthcare usage post Urgent Care Visit

Patients who used healthcare system in general during 3 months post urgent care visit:	44/78 (56.4%)
Patients who used healthcare system specifically for their headache:	36/78 (46.2%)
<i>Time Interval</i>	
Within a day	5/36 (13.9%)
Within a week	11/36 (30.6%)
Within a month	8/36 (22.2%)
Within 3 months	4/36 (11.1%)
Within a year	5/36 (13.9%)
Over a year	3/36 (8.3%)
<i>Specialty</i>	
Neurology	25/36 (69.4%)
PCP	6/36 (16.7%)
Ophthalmology	2/36 (5.6%)
ENT	1/36 (2.8%)
Emergency Department	3/36 (8.3%)
Urgent Care	9/36 (25.0%)
Orthopedics	1/36 (2.8%)
Frequency of revisits to Urgent Care within 3 months of index visit:	
0 times	73/78 (93.6%)
1 time	4/78 (5.1%)
2 times	1/78 (1.3%)

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