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Mitigating Suicide Risk in Young Patients: Urgent Care's Role in Identifying Patients At-Risk And Saving Lives

Jeanne Marconi, MD

Over the past 20 years, and more recently throughout the pandemic, suicide rates in the United States have generally been increasing; this has been especially true among adolescents and young adults.[1] Despite improvements in recognition and appreciation of the impact of mental health issues, suicide rates continue to climb in America. Healthcare centers, whether inpatient or outpatient, have the unique opportunity to identify patients at-risk for self-harm and to intervene. These opportunities can occur wherever patients seek care with the use of appropriate tools. Given the number of urgent care (UC) centers in the United States and continuously increasing patient volumes, we are well situated to serve patients in reducing suicide risk within the larger medical community.

Concerning Trends in Suicide Rates Among Youth in America

The current trends in suicides among younger patients are worrisome. Suicide is now the second leading cause of death in youth aged 10-24 years and the eighth leading cause of death in children 5-10 years of age.[2] The rates of childhood mental health concerns and suicide have been rising steadily for more than a decade.[2]

In 2021, the American Academy of Child and Adolescent Psychiatry declared a national emergency in children's mental health related to the issue of increasing suicide rates in this demographic. In 2022, the American Academy of Pediatrics recommended regular suicide screening for all children 12 years and older and when clinically indicated for children younger than 12.[3] Despite these recommendations, suicide screening among this age group is still not commonplace in non-mental health and/or specialty care settings. The problem is compounded by the nationwide shortage of behavioral health services for children, which means that many at-risk children will have limited or no contact with these specialists.

For the UC industry, which serves as a touch point for episodic care, it is now critical to fill the screening gap we are experiencing and support the care for young patients with acute mental health crises and risk for suicide.

Guidance for Suicide Risk Assessment

In 2016, the Joint Commission released an updated sentinel event alert on suicide prevention, advising all inpatient and outpatient healthcare settings to improve their ability to detect suicidality and assure care for at-risk patients. While the 2023 update to the document does not issue any requirement for suicide screening in non-behavioral health settings, the recommendation to perform suicide risk screening was confirmed.[4] Since these recommendations are advisory and not mandatory, considerable variation exists on how healthcare centers approach the process of suicide risk screening.

Clinicians commonly cite concerns about inadvertently increasing suicide risk as their reason for avoiding questions regarding suicidal thoughts. However, this consideration has been thoroughly studied and is not supported by the available evidence.[5]

The feasibility of screening for suicide has also been well studied in behavioral health centers, emergency departments (ED) and primary care settings. As such,

Jeanne Marconi, MD, Vice President, Clinical Integration, PM Pediatric Care

standardized tools have been developed and validated which are brief, easy to interpret, and have favorable sensitivity and specificity; these tools are ideal for use in an UC practice.

"Clinicians may be reluctant to use the tool due to time constraints, but our experience has shown the tool does not decrease UC efficiency."

We have seen significant changes in suicide screening over the past decade. With the improvements and move toward measurement-based care, new screening tools have been developed and validated for standardization. Two of the most commonly utilized tools for suicide screening in youth are the Ask Suicide Questions (ASQ)[6] and the Columbia-Suicide Severity rating Scale (CSSR).[7] Both tool kits are found online at no cost and are very easy to teach and use. The ASQ only takes about 20 seconds to complete, while the CSSR is a bit more involved and generally will take 5 minutes to complete.[8] The commonly used depression screening tool, Patient Health Questionnaire-9, is not strictly a suicide risk tool and importantly is less reliable in youth than adults.[9]

Early intervention through screening has proven paramount. As many as 60% of youth who commit suicide have visited a provider in the 30 days prior to the event,[10] and 90% of parents of youth who commit suicide were unaware that their child was struggling.[11] Clinicians, therefore, have an opportunity to identify youth at risk for suicide. Screening at annual well visits is important, but many of these tragedies occur between health maintenance visits.

Our Suicide Screening Experience

In our organization, we have invested in mental health screening as a critical initiative in the care of children by implementing universal ASQ screening for suicide in patients 11 years and up. Our organization, PM Pediatric Care, is the largest pediatric-specific UC network in the United States with 79 locations and a virtual telehealth network covering 17 states. Recognizing the growing epidemic of mental health challenges among children, this initiative has allowed our UC centers to transcend the traditional acute care model and offer a public health service in an attempt to curb the alarming growing rate of mental health issues facing America's youth. The screening takes less than 30 seconds to complete and has been shown to have a sensitivity of 96.9% and a specificity of 87.6% for detecting youth at risk for suicide.[8]

Many UC clinicians have expressed concerns about large numbers of positive results and the challenges that may ensue in caring for and/or referring these cases. In reviewing our initial data for quality purposes, however, we've found that our results mirror that of another published study with a similar sample size by Patel et al., finding approximately 4% of patients screening positive. Importantly, less than 1% of those who screened positive in the Patel study had a mental health complaint.[12] After identification, safety, and treatment plans were initiated with these patients, they received information and were referred back to the medical home. About half of those who screened positive required immediate referral to higher level of care, and the others were sent home with close supervision and a safety plan.[12]

Implementation

Suicide-risk-screening training for clinicians and staff is straightforward, as the ASQ screen is validated and easy to interpret. What will likely be unique to each practice are the requisite workflows for educating parents as well as how to administer and score the tool and determine referral options in the community. Based on my experience leading this initiative in our organization, the two most critical steps I've found to getting suicide screening into practice are:

1. Identifying a champion in the practice to ensure a smooth and efficient process rollout and who will maintain accountability for implementation and ongoing oversight.
2. Partnering with community resources and knowing which EDs have services that can support pediatric behavioral health for those who need further evaluation and/or inpatient treatment.

Clinicians may be reluctant to use the tool due to time constraints, but our experience has shown the tool does not decrease UC efficiency when implemented. One patient who came in for a COVID-19 vaccine was screened per our protocol. He screened positive, and further questioning revealed that he had an active suicide plan to hang himself that evening. He had even prepared the noose. Another patient who had been following with a psychiatrist had a positive

screen and noted she had been having suicidal thoughts for some time. She divulged that her psychiatrist had not asked about suicidality for a number of visits. These are examples of inappropriate and common assumptions that minor visits don't have anything serious to consider or that another clinician will screen for suicide risk.

The ASQ tool can be completed by the patient on paper forms, wipe off laminated form, or directly into the electronic medical record (EMR), in some cases. We have used a vendor that can send the screening questionnaire via text message. After completion, the questionnaire is automatically scored and returned to the clinician. The results are then recorded in the EMR as part of the visit note.

"Meanwhile, the benefits of suicide screening far outweigh these hypothetical drawbacks"

As part of monitoring this initiative, we looked closely at how implementing such screening may affect workflow by asking our providers to document the amount of additional time spent when encountering a positive screen. We found that even with a positive screen, it took providers less than 6 minutes to complete an additional mental health evaluation and necessary safety planning or referral to the ED. Parents have not been resistant to this screening, and we experienced less than a 10% refusal rate. When collecting feedback from staff about how long it took to offer the screen and input the results in the chart, they reported that it didn't require much time or interfere with the daily workflow.

From personal experience, we found the biggest hurdle to implementing suicide screening in our centers to be clinical staff buy-in, owing to discomfort and worry about potential parent/caregiver questions. Once our staff realized that most parents were used to these screenings in primary care visits, this resistance seemed to wane. As with any new quality initiative, creating specific workflows and getting staff trained took some time and support from our clinical leaders. However, today this is now accepted as standard practice in our organization.

Conclusion

In UC, we have an opportunity when young patients present to our centers to mitigate the vast unmet behavioral health needs of this demographic. With any change, resistance is to be expected. Yet, the concerns expressed by our staff for how suicide risk screening would decrease flow and add untenable amounts of extra work have not been realized. Meanwhile, the benefits of suicide screening far outweigh these hypothetical drawbacks.

Whether we previously have appreciated it or not, in UC, we find ourselves on the frontlines of the mental health crisis of America's youth. We've shown through implementation of suicide risk screening in our centers, that this is not only achievable in UC, but lives have been saved and tragedies averted. ■

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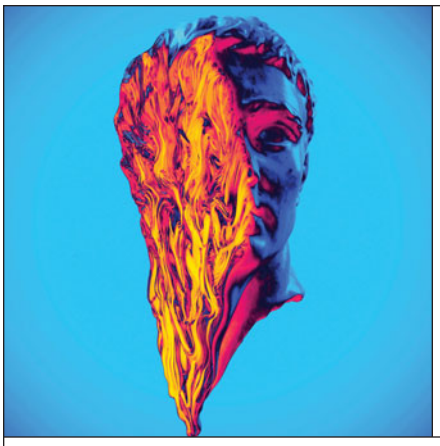

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CASE REPORT

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URGENT INTERACTIONS

LETTERS TO THE EDITOR

In response to the February 2024 Letter From the Editor in Chief Joshua W. Russell, "Our Success in Urgent Care is Defined by How We Play Our Greatest Hits"

Having been around in both FM and occ med for almost 44 years, I have a few thoughts. If one knows the top 20 most common diagnoses in UC, then training must focus on them.

As you point out, there is a deficit in finding MDs or DO docs to fill the need, so we need "extenders" (PAs/NPs). A PA only gets 2 years of training and is supposed to be able to treat patients. NPs have a BSN and MSN but still lack clinical training. However, the extenders cost half that of a doctor, so they become attractive for that reason.

There are no easy answers. As one of my medical school mentors said, "After 20 years in practice, perhaps you will know what you are doing."

Jonathan Dreazen, MD
Concentra

"Perform a thorough trauma history and physical when assessing patients with facial nerve palsy, as delayed-onset traumatic facial nerve palsy can occur in the days following head injury, with misdiagnosis as Bell's palsy, potentially delaying treatment and leading to lifelong consequences for patients."

—JR Barrett, MD, FACEP

Author of Delayed-Onset Facial Nerve Palsy Following Post-Auricular Gunshot Wound: A Case Report (Page 13)

"Beware the infrequent flyer and maximize your evaluation and interaction. You don't know when or if they'll get care again."

—Joshua W. Russell, MD, MSc, FUCM, FACEP

JUCM Editor in Chief

"A brilliant diagnosis dims when the patient does not fill their prescription."

— Michael Weinstock, MD

JUCM Senior Clinical Editor

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Send your letters to: editor@jucm.com

Who's on First?

Lou Ellen Horwitz, MA

Here at the Urgent Care Association (UCA), we often used to ask ourselves, "Is this a UCA thing or a College thing or a Foundation thing?" Over the past few years of talking to all of you, I learned that we were not the only ones asking this question.

When you build a house, over the years, you may add on a fantastic new sunroom, then an expansive extra bedroom, and then maybe you remodel your kitchen. At the end of all that work—no matter how great the parts are—you probably have some extra work to do to make it all look like it goes together again.

That's some of the work we've been doing: Figuring out exactly what work belongs to UCA, what belongs to the College of Urgent Care Medicine (CUCM), what belongs to the Urgent Care Foundation (UCF), and how all of our work weaves together to drive momentum for our members and Urgent Care as a whole.

We believe understanding who does what matters because there is a lot of great work going on, and a lot of ways to get involved in that work, and a lot of people interested in being involved. We want to make it as easy as possible to understand how everything hangs together, so getting clarity around "who's on first" was a critical piece. Now we have to be able to explain it.

We have a gigantic map that illustrates it all. It has to be gigantic because there is so much good work happening, and it almost all interconnects. If you are at the Urgent Care Convention this month, you can literally walk around it and explore. We are thinking about creating an interactive digital version of this "entity map" to come later in the year.

What's essential for you to know now is that each of the entities in our Urgent Care universe have Core Purposes and have divided up their work to align directly with those Core Purposes. There's way more to this (hence the giant map), but the below broadly outlines who's on first for what:

Lou Ellen Horwitz, MA is the chief executive officer of the Urgent Care Association.

"That's some of the work we've been doing: Figuring out exactly what work belongs to UCA, what belongs to the College of Urgent Care Medicine (CUCM), what belongs to the Urgent Care Foundation (UCF), and how all of our work weaves together to drive momentum for our members and Urgent Care as a whole."

Urgent Care Association Core Purpose: Ensure the advancement and long-term success of Urgent Care.

- Ensure advancement through empowering best practice
  - Set center standards
  - Provide resources
  - Operational and impact benchmarking
- Ensure long-term success through advocacy
  - Lobby
  - Raise awareness
  - Create connections

College of Urgent Care Medicine Core Purpose: Achieve specialty recognition for Urgent Care.

- Lead Clinical Practice Excellence
  - Define clinician competence
  - Engage leaders

- Promote evidence-based practice
- Recognize excellence

Urgent Care Foundation Core Purpose: Enable the viability of Urgent Care.

- Support recognition and research
  - Award grants for original research in clinical and administrative areas
  - Recognize Urgent Care achievers
  - Raise awareness of Urgent Care
  - Support special initiatives
  - Raise funds through events and campaigns

There's obviously a lot more to this seeing as how we need a giant illustration to show it, so we've also created a document with additional details on all of the above. We'll have copies of it at the Urgent Care Convention, and you can get it at urgentcareassociation.org. It helps show how all this work weaves together.

Lastly, we've realized that the giant illustration is pretty impractical for everyday use, so we've created a mini version that can fit in your pocket. You can see a legible version by clicking the QR code.

Urgent Care has a big story to tell, and we are (still) just getting started. ■

CONTINUING MEDICAL EDUCATION

Release Date: April 1, 2024
Expiration Date: March 31, 2025

Target Audience
This continuing medical education (CME) program is intended for urgent care physicians, primary-care physicians, resident physicians, nurse-practitioners, and physician assistants currently practicing, or seeking proficiency in, urgent care medicine.

Learning Objectives
1. To provide best practice recommendations for the diagnosis and treatment of common conditions seen in urgent care
2. To review clinical guidelines wherever applicable and discuss their relevancy and utility in the urgent care setting
3. To provide unbiased, expert advice regarding the management and operational success of urgent care practices
4. To support content and recommendations with evidence and literature references rather than personal opinion

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This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the Institute for Medical and Nursing Education (IMNE) and the Institute of Urgent Care Medicine. IMNE is accredited by the ACCME to provide continuing medical education for physicians. The IMNE designates this journal-based CME activity for a maximum of 3 *AMA PRA Category 1 Credits™*.

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Delayed-Onset Facial Nerve Palsy Following Post-Auricular Gunshot Wound: A Case Report (page 13)

1. Temporal bone fractures result in facial nerve injury in approximately what percentage of cases?
a. 7%
b. 10%
c. 20%
d. 25%

2. Which statement is true for delayed onset of symptoms of facial nerve palsy?
a. Has a more favorable prognosis
b. Is associated with near-complete to complete recovery in 90% of patients
c. Both A and B
d. None of the above

3. In cases of traumatic facial nerve palsy without causality found on computed tomography, which imaging is indicated?
a. Magnetic resonance imaging
b. X-ray
c. Additional computed tomography
d. No imaging

Urgent Care Evaluation and Management Of Proximal 5th Metatarsal Fractures (page 25)

1. What is the most common mechanism that causes an acute fracture of the tuberosity of the 5th metatarsal bone?
a. Direct blow to the foot
b. Fracture due to bone cancer
c. Foot inversion and plantar flexion
d. Eversion of the foot while the knee and hip are flexed

2. An avulsion fracture of the tuberosity of the proximal 5th metatarsal is managed exactly the same as a fracture of the diaphysis of the 5th metatarsal.
a. True
b. False

3. Which of the following increase the risk of delayed union or nonunion of a Jones fracture?
a. Previous fracture
a. Widened fracture line
b. Intramedullary sclerosis
c. History of repetitive trauma
d. All of the above

How Useful is Ultrasound in Acute Female Pelvic Pain? (page 35)

1. Which of these conditions may cause acute pelvic pain?
a. Adnexal torsion
b. Ectopic pregnancy
c. Pelvic inflammatory disease
d. All of the above

2. Which of these is one of the main risk factors for ovarian torsion?
a. Previous history of adnexal torsion
b. Age 80 or older
c. Urinary tract infection
d. Depression

3. Where is ectopic pregnancy (EP) most likely to occur?
a. Fallopian tube
b. Ovaries
c. Abdominal cavity
d. None of the above

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Case Report

CME: This article is offered for AMA PRA Category 1 Credit.™
See CME Quiz Questions on page 11.

Delayed-Onset Facial Nerve Palsy Following Post-Auricular Gunshot Wound: A Case Report

Urgent Message: Mistaking traumatic facial paralysis for Bell's palsy can delay treatment and have lifelong consequences. Prompt imaging and otolaryngology consultation are critical in determining disposition and management.

David Hourani, MD; Bradley M. Golden, DO; Daniel McCollum, MD; John R. Barrett, MD

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Keywords: facial nerve palsy; cranial nerve VII palsy; temporal bone trauma; temporal bone fracture; facial; nerve; palsy

Abstract

Introduction: Facial nerve palsy is a common presentation to emergency departments (ED) or urgent care (UC) facilities.

Clinical Presentation: A 29-year-old male presented to the ED with right-sided facial droop for 2 days. Nine days prior to presentation, he had been seen in the ED after a post-auricular gunshot wound (GSW) with injury to the superficial auricular and post-auricular area. Non-contrast head computed tomography (CT) at that time demonstrated diastatic temporal bone fractures but was otherwise unremarkable.

Physical Exam: On his second presentation, his exam was significant for complete right forehead and perioral paralysis but with preserved closure of the eye. A repeat head CT with and without contrast was obtained, which showed a new mastoid effusion in comparison with his CT from 9 days prior.

Case Resolution: Otolaryngology (ENT) was consulted, and the on-call ENT physician performed bedside incision and drainage. The patient was discharged home with 2-day otolaryngology clinic follow-up, oral and otic antibiotics, and corticosteroids.

Conclusion: Traumatic facial nerve palsy is a relatively

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Image 1. Initial Head CT With Diastatic Fractures Of The Right Occipitomastoid Sutures

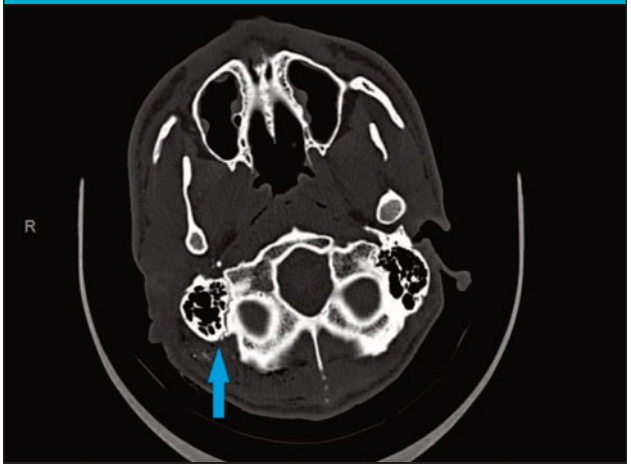
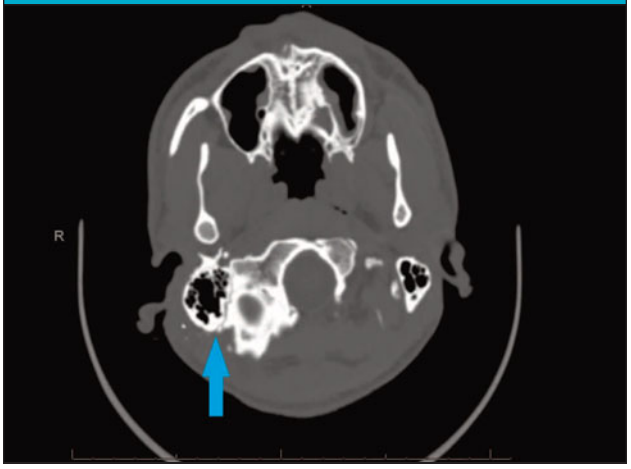


Image 2. Follow-Up Head CT 10 Days Later With Stable Diastatic Fractures And Trace Mastoid Effusion



common presentation to acute care settings. Thorough history and physical exam are essential for early recognition. Misdiagnosis or delay in treatment can result in significant, long-term consequences. If available, prompt CT imaging and ENT consultant involvement are recommended for determination of appropriate disposition and management. If unavailable, as is often the case in UC, immediate ED referral where ENT coverage is available is important to prevent avoidable delays in definitive care.

Introduction

Facial nerve palsy is a common presentation to the ED and UC setting. While many cases are idiopathic, an underlying congenital or acquired etiology can sometimes be identified. Acquired causes tend to be infectious, inflammatory, neoplastic, iatrogenic, or traumatic. We present the case of delayed-onset facial nerve palsy 9 days after an auricular and post-auricular gunshot wound.

Case Presentation

A 29-year-old male with no significant past medical history presented to the ED with right-sided facial droop for 2 days. Nine days prior to presentation, he had been seen in the same ED for a GSW to the back of the head, which resulted in injuries to the superficial auricular and posterior auricular area. At his initial ED presentation, non-contrast head CT demonstrated diastatic temporal bone fractures on the side of the GSW but was otherwise unremarkable (**Image 1**). He was discharged the same day with prophylactic amoxicillin-clavulanic acid after having his wound closed by the ENT on-call who had evaluated the patient in the ED. He reported he had been compliant with taking the prophylactic antibiotic. He denied any prior history of facial droop. At the second visit, he noted right-sided ear and head pain but denied fever, chills, otorrhea, or wound drainage.

Physical Exam

On exam, his neurologic and cranial nerve exam revealed no deficits except for an isolated finding suggestive of CN VII (facial nerve) palsy. Specifically, complete paralysis of the right forehead and perioral regions was noted. Closure of the eye was preserved and therefore, his facial nerve palsy was classified as House-Brackman grade 3 (**Table 1**).[1] His otoscopic exam was limited by auricular pain and auditory canal edema. He had an evident auricular and posterior auricular wound with overlying eschar, which was debrided at the bedside. No overlying erythema or purulent drainage was noted, but some bogginess and tenderness overlying the mastoid area was noted.

Evaluation and Medical Decision Making

A repeat head CT with and without contrast was obtained, given concern for infection (**Image 2**), which showed a new small mastoid effusion in comparison with his CT from 9 days prior. There had been no progression of the fractures or new fractures.

Given that the patient had a new, objective neurological deficit in the form of right facial paralysis consistent with a CN VII palsy, ENT was consulted in the ED as this issue was believed to most likely represent a traumatic sequala. Despite the fact that he was clinically well-appearing with reassuring vital signs and a normal temperature, infection/mastoiditis was suspected.

Table 1. House-Brackman Grading System[1]

Grade	Description	Characteristics
1	Normal	Normal facial function in all areas
2	Mild dysfunction	Gross: slight weakness noticeable on close inspection; may have very slight synkinesis At rest: normal symmetry and tone Motion: Forehead – moderate-to-good function Eye – complete closure with minimum effort Mouth – slight asymmetry
3	Moderate dysfunction	Gross: obvious, but not disfiguring difference between two sides; noticeable but not severe synkinesis At rest: normal symmetry and tone Motion: Forehead – slight-to-moderate movement Eye – complete closure with effort Mouth – slightly weak with maximum effort
4	Moderately severe dysfunction	Gross: obvious weakness and/or disfiguring asymmetry At rest: normal symmetry and tone Motion: Forehead – none Eye – incomplete closure Mouth – asymmetric with maximum effort
5	Severe dysfunction	Gross: only barely perceptible motion At rest: asymmetry Motion: Forehead – none Eye – incomplete closure Mouth – slight movement
6	Total paralysis	No movement

Differential Diagnosis and Final Diagnosis

Given a new, hard/objective neurologic finding, central nervous system (CNS) processes such as ischemic or hemorrhagic stroke were considered. However, the clear presence of forehead involvement, which suggests a cranial nerve rather than central lesion, in addition to the head CT results, made CNS lesions less likely. Given the recent penetrating trauma and the new mastoid effusion on CT, infection (ie, mastoiditis) remained on the differential, and bedside incision and drainage was performed by ENT without resultant purulent drainage. In discussion with ENT, the patient was diagnosed with a traumatic right facial nerve palsy.

He was discharged home with 2-day ENT follow-up, oral ciprofloxacin, a 7-day course of prednisone, and ciprofloxacin-dexamethasone otic drops. He was also given lubricating eye drops and instructions on eyelid taping in consideration for possible progression of the palsy and issues with eyelid adduction and subsequent corneal erosions.

Case Resolution

When the patient was seen in the ENT clinic 2 days later, his House-Brackman score remained 3. The antibiotics were stopped, but the 7-day course of prednisone was continued. A week after this, his House-Brackman was unchanged, and the prednisone was continued for another 4 days. Urgent electromyography (EMG) was obtained in consideration of possible facial nerve decompressive surgery. After this time, he was unfortunately lost to follow-up, however, and the remainder of his clinical course is unknown.

Discussion

The facial nerve is the most commonly injured cranial nerve after blunt head trauma,[2] and trauma (including iatrogenic) is the second most frequent cause of facial nerve palsy.[1] This can occur with or without temporal bone fractures and can present with either immediate or delayed onset. Temporal bone fractures result in facial nerve injury in approximately 7% of cases.[3] For patients with immediate onset, the diagnosis is less difficult, and the prognosis for recovery is poor. These patients will often undergo surgical exploration.[4]

In contrast, delayed onset of symptoms has a more favorable prognosis and is associated with near-complete to complete recovery in 90% of patients.[5] Delayed onset of facial paralysis after temporal bone fracture

appears to be relatively uncommon.[6] As opposed to the more common idiopathic facial nerve paralysis (ie, Bell's palsy), in the setting of recent head trauma, patients with facial paralysis benefit from rapid ENT evaluation. This is true even in cases where head CT does not show temporal bone fractures or other significant findings, as facial nerve edema may require urgent decompressive surgery to ensure optimal prognosis for recovery.[4,7] In clinical settings without access to CT imaging or immediate ENT consultation, the knowledge that delayed onset facial nerve palsy can occur as a complication following head trauma can help the astute UC clinician recognize the importance of ED referral, which is often not indicated in typical cases of Bell's palsy.

Imaging combined with a thorough history and physical exam is central to the evaluation of patients with facial nerve palsy immediately after head trauma as well as in cases with somewhat delayed presentations. Initial evaluation of such patients with possible traumatic facial nerve palsy begins with non-contrast head CT. Additional high-resolution CT of the temporal bones may also be helpful.[8] In cases of traumatic facial nerve palsy without causality found on CT, proceeding with magnetic resonance imaging (MRI) is indicated.[8,9] Dedicated imaging studies, such as temporal bone CT or MRI, can often be deferred after an initial negative head CT in cases where rapid ENT follow-up is arranged.

EMG and electroneurography may also be used by specialists to confirm the initial diagnosis or to serially track progress or degeneration. These studies, however, are not emergently indicated and can be ordered at the discretion of the consulting specialist in an outpatient setting.[8,9,10]

The House-Brackman is the standard scoring system for quantifying the severity of facial nerve paralysis. (**Table 1**) This system is useful for quantifying the patient's status and facilitating discussions with consultants. Treatment recommendations differ based on the severity of the facial paralysis.[2,4,7,11]

Although of questionable utility, the mainstay of treatment for traumatic facial nerve palsy are systemic corticosteroids.[7] Similar to the treatment of Bell's palsy, steroid treatment recommendations are typically a 5-7 day burst.[12] If there is concern for concurrent otitis media or mastoiditis, systemic antibiotics are appropriate as well.[13] While severe cases of Bell's palsy are often treated with antiviral therapy, there is no indication for antivirals in traumatic facial nerve palsy. Finally, eye care for patients with incomplete eye closure (taping eyelids closed at night and using eye lubricant or artificial tears during the day) is an important component of therapy in both Bell's palsy and traumatic facial nerve palsy.[14]

Ethics Statement

The patient was unable to be contacted because he was lost to follow-up in our hospital system and did not respond to calls to the phone number on record by the research team. Therefore, demographics and some details of the case were changed to protect patient anonymity and confidentiality.

Takeaway Points for Urgent Care Clinicians

- Traumatic facial nerve palsy can occur somewhat commonly after head injury.
- Thorough history and physical exam are essential in early recognition. Mistaking traumatic facial paralysis for Bell's palsy can delay treatment and have lifelong consequences.
- Prompt imaging and otolaryngology consultation are critical in determining disposition and management. Initial therapies may range from oral corticosteroids to surgical decompression. ■

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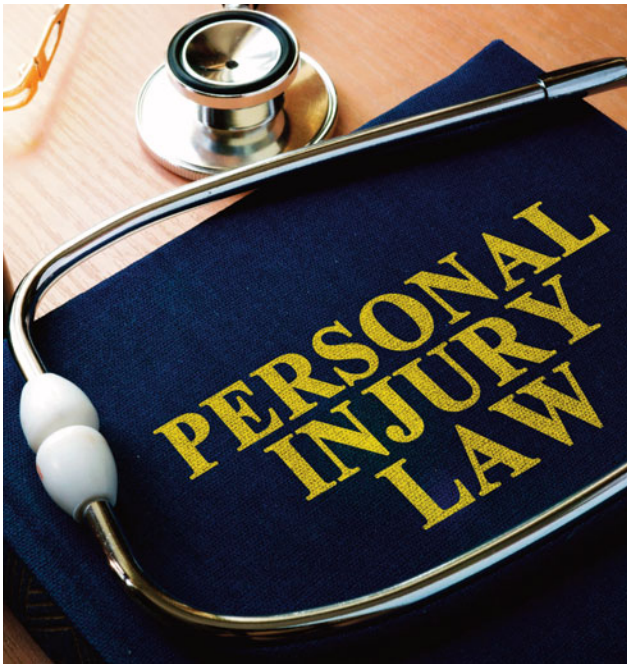
Urgent Care Billing Matters for Personal Injury Presentations

Urgent Message: The uncertain and extended payment cycle for treating personal injuries caused by third parties, which may be subject to litigation or settlement, can be managed using tools such as letters of protection and medical liens.

Alan A. Ayers, MBA, MAcc

It's not uncommon for an individual seriously injured in an accident or by medical negligence to bring a personal injury lawsuit against the at-fault party. If found liable, the at-fault party is held responsible for all damages caused by the accident, including medical bills. However, there's usually a lag in the process of medical professionals being paid because "fault" is a finding of fact by a court that may stretch on for months or even years. As a result, most urgent care centers refuse to treat such patients, despite having the capability and capacity to do so.



Background

The typical personal injury case can take from a few months to several years to conclude.[1] Most cases take an average of 12 to 14 months to resolve, but the timeline of a claim may depend on many varied factors. Nonetheless, the medical provider expects to be paid for the care they have rendered, and the patient is always responsible for their medical bills.

If the patient uses their health insurance, the provider is paid, but the health insurer will have subrogation rights against any future settlement in litigation. If the patient uses Medicare or Medicaid, the government can subrogate not only past bills but also future expected costs stemming directly from the injury. The government always has an automatic lien and first priority on any settlement.

But a medical provider may not want to continue treating a patient if they believe that they will not be paid. On the other hand, a patient will want to continue the care but may not be able to afford to pay the medical bills until their insurance claim is settled. In the meantime, the patient hires a personal injury attorney to settle or litigate with the insurance company. That process, again, can take time—all the while, no medical bills are being addressed.

A solution growing in popularity is what is known as a letter of protection. Financing companies that buy liens from doctors before litigation is complete are also becoming more common with the practice. And some healthcare providers treating personal injury victims

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are also agreeing to get paid only after a lawsuit is concluded. One author has noted that a "spate of legal and legislative changes has led to a proliferation of the practice in California and other states, including Florida, Colorado, Texas, and Georgia…."[2] This article will examine this practice and what it means for healthcare providers.

What is a Letter of Protection?

A letter of protection is defined generally as promise from the injured person and his or her attorney to pay the physician at the conclusion of a personal injury case.[3] In effect, it is an "IOU" for healthcare that is to be repaid at the end of the litigation.[4] The plaintiff's counsel issues a "letter of protection" to the doctor to enable care to continue, and the letter of protection assures that the provider will be paid from any future settlement.[5]

Also known as a type of medical lien, this is a legally binding agreement between a healthcare provider and a patient. This contract gives the healthcare provider the ability to recoup money owed for medical services by placing a lien on the patient's personal injury claim.[6] When the case comes to an end by jury verdict or by settlement, the healthcare provider exercises their rights according to the lien agreement and recovers the costs of healthcare they provided.

The Lien Process

Healthcare providers must "perfect the lien," by sending notice of the bill to the at-fault party. For example, the statute in Missouri says that a lien is not effective without written notice containing the following:

- The name and address of the injured person
- The date of the accident
- The name and location of the medical practice
- The name of the person, firm, or corporation alleged to be liable to the injured party for the injuries received.[7]

This notice must be sent by certified mail with return receipt requested to the allegedly liable party or parties. The provider must also send a certified copy with return receipt requested to the insurance company that has insured the person, firm, or corporation, against such liability.[7] As a result, provided the lien is properly asserted, when the check for the settlement or jury verdict is delivered to the plaintiff's attorney, he or she must pay the healthcare provider the balance owed to them. But regardless of what happens in the settlement or at trial, the Missouri statute stipulates that the physician can only receive 50% of the balance of the settlement.[7]

Where Medical Liens are Recognized

While most states permit medical liens and letters of protection, several states do not. The hospital lien laws of 32 states provide that an attorney's lien/fee takes precedent over the hospital lien.[8] Six states have laws on the books that state that the hospital lien takes priority over all other liens.[8] Some states, such as Vermont, provide that the hospital lien cannot take more than two-thirds of the total third-party settlement or $500, whichever is lesser, after attorneys' fees.[9]

"For a physician, working on a lien basis may mean reimbursement at likely a higher rate than their contractual rate with an insurer."

In addition, there are states that subordinate a physician's or dentist's lien and cannot claim more than 25% of the third-party recovery remaining after a hospital lien has been repaid. However, even in the 9 states that do not allow this practice by statute, settlement liens are still permitted under common law theories of equity. Even so, it is important to note that state legislatures are keeping a close eye on this issue and many are acting. For example, the Florida Legislature addressed past medical expenses and letters of protection this year as part of a tort reform bill.[10]

Analysis

A primary benefit of using a lien is that it can provide an uninsured patient with access to a higher quality of healthcare. And for a physician, working on a lien basis may mean reimbursement at likely a higher rate than their contractual rate with an insurer.[11]

But not all physicians accept liens as a basis for payment, as the biggest risk for physicians is that the plaintiff will either not be successful in the lawsuit or receive a sizable settlement, and, as a result, the provider will be uncompensated or will be undercompensated. If the total settlement is insufficient to cover the amount of the liens, the medical provider will only get pennies on the dollar. Some plaintiffs think they have achieved a large settlement, only to discover they get nothing be-

cause the lion's share will go their attorney and doctors.

In addition, it is important to note that there is a significant difference between insured and uninsured accident victims. In most instances, the state imposes a limit on the amount an insurer can recoup from the settlement money; however, there is typically no such limit on liens. Also, with insurance, subrogation is usually a component of the insurance policy which provides that the insurer has the right to collect damages on behalf of the other party (in this case, the plaintiff). As such, it is a way for the insurance company to recoup its losses.

"If the total settlement is insufficient to cover the amount of the liens, the medical provider will only get pennies on the dollar. Some plaintiffs think they have achieved a large settlement, only to discover they get nothing."

Again, as mentioned above, physicians cannot be sure that they will be paid the entire portion of the bill for their services. Plus, providers must wait as long as year or longer for the resolution of a plaintiff's case.[12]

In addition, if the accident victim loses the case, he or she will be liable for all of their healthcare expenses and will need to pay them at some point. They will still owe a considerable sum to the healthcare provider and will be personally responsible for paying it in total. It is possible for the healthcare provider to enforce their legal rights and take the patient to court or collections.[12]

Due to the range of presentations that could be considered "personal injury" there is no separate published data as to the percent of urgent care centers that accept such patients. Anecdotally, "corporatized" chains, staffed by advanced practice providers, are most likely to refer such patients to the emergency department due to risk associated with the acuity of the injury, the lack of available follow-on care, and the complexities of payment, whereas an independent, physician-owned and operated urgent care, especially one with sizable workers compensation volume, pain management, and/or physical therapy services, is more likely to treat the injury.

According to the Urgent Care Association, 7% of urgent care visits are for work-related injuries.[13] What's the difference? Generally, a personal injury claim is concerned with who's at fault, but when a similar injury occurs at work, the concern is with whether the injury occurred on the clock and in the course of one's employment. Workers compensation thus provides "no fault" coverage. Whereas damages in a personal injury claim may be punitive, including emotional distress and other damages, workers compensation is limited to medical and lost wages. Workers compensation rules are generally defined by statute and administered by the Industrial Commission of each state.

Summary

While there are legal arrangements for urgent care providers to be paid for personal injury cases, and some can result in higher fees for physicians than they would receive from health insurance, there is complication in collections and delay in payment as well as the risk it can expose victims to large bills if their lawsuits fail.[12] ■

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- **Paradoxical Bronchospasm:** AIRSUPRA can produce paradoxical bronchospasm, which may be life threatening. Discontinue AIRSUPRA immediately and institute alternative therapy if paradoxical bronchospasm occurs. It should be recognized that paradoxical bronchospasm, when associated with inhaled formulations, frequently occurs with the first use of a new canister
- **Cardiovascular Effects:** AIRSUPRA, like other drugs containing beta$_2$-adrenergic agonists, can produce clinically significant cardiovascular effects in some patients, as measured by pulse rate, blood pressure, and/or other symptoms. If such effects occur, AIRSUPRA may need to be discontinued. In addition, beta-agonists have been reported to produce electrocardiogram (ECG) changes, such as flattening of the T wave, prolongation of the QTc interval, and ST-segment depression. Therefore, AIRSUPRA, like all sympathomimetic amines, should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension
- **Do Not Exceed Recommended Dose:** Clinically significant cardiovascular effects and fatalities have been reported in association with excessive use of inhaled sympathomimetic drugs
- **Hypersensitivity Reactions, Including Anaphylaxis:** Can occur after administration of albuterol sulfate and budesonide, components of AIRSUPRA, as demonstrated by cases of anaphylaxis, angioedema, bronchospasm, oropharyngeal edema, rash, and urticaria. Discontinue AIRSUPRA if such reactions occur
- **Risk of Sympathomimetic Amines with Certain Coexisting Conditions:** AIRSUPRA, like all therapies containing sympathomimetic amines, should be used with caution in patients with convulsive disorders, hyperthyroidism, or diabetes mellitus and in patients who are unusually responsive to sympathomimetic amines
- **Hypokalemia:** Beta-adrenergic agonist medicines may produce significant hypokalemia in some patients. The decrease in serum potassium is usually transient, not requiring supplementation
- **Immunosuppression and Risk of Infections:** Due to possible immunosuppression from the use of inhaled corticosteroids (ICS), potential worsening of infections could occur. Use with caution. A more serious or fatal course of chickenpox or measles can occur in susceptible patients
- **Oropharyngeal Candidiasis:** Has occurred in patients treated with ICS agents. Monitor patients periodically. Advise patients to rinse his/her mouth with water, if available, without swallowing after inhalation

treatment or prevention of bronchoconstriction and to reduce the risk of exacerbations in patients with asthma 18 years of age and older.

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IMPORTANT SAFETY INFORMATION (CONT'D)

- **Hypercorticism and Adrenal Suppression:** May occur with very high doses in susceptible individuals. If such changes occur, consider appropriate therapy
- **Reduction in Bone Mineral Density:** Decreases in bone mineral density have been observed with long-term administration of ICS. For patients at high risk for decreased bone mineral density, assess initially and periodically thereafter
- **Glaucoma and Cataracts:** Have been reported following the long-term administration of ICS, including budesonide, a component of AIRSUPRA
- **Effects on Growth:** Orally inhaled corticosteroids, including budesonide, may cause a reduction in growth velocity when administered to pediatric patients. The safety and effectiveness of AIRSUPRA have not been established in pediatric patients, and AIRSUPRA is not indicated for use in this population
- **Most common adverse reactions** (incidence ≥ 1%) are headache, oral candidiasis, cough, and dysphonia
- **Drug Interactions:** AIRSUPRA should be administered with caution to patients being treated with:
    - Strong cytochrome P450 3A4 inhibitors (may cause systemic corticosteroid effects)
    - Short-acting bronchodilators (concomitant use of additional beta-agonists with AIRSUPRA should be used judiciously to prevent beta-agonist overdose)
    - Beta-blockers (may block pulmonary effects of beta-agonists and produce severe bronchospasm)
    - Diuretics or non-potassium-sparing diuretics (may potentiate hypokalemia or ECG changes). Consider monitoring potassium levels
    - Digoxin (may decrease serum digoxin levels). Consider monitoring digoxin levels
    - Monoamine oxidase inhibitors (MAOI) or tricyclic antidepressants (Use AIRSUPRA with extreme caution; may potentiate effect of albuterol on the cardiovascular system)
- Use AIRSUPRA with caution in patients with hepatic impairment, as budesonide systemic exposure may increase. Monitor patients with hepatic disease

Please see Brief Summary of Prescribing Information on adjacent pages.

References: 1. AIRSUPRA® (albuterol/budesonide) [prescribing information]. Wilmington, DE: AstraZeneca Pharmaceuticals LP; 2023. **2.** FDA approves drug combination treatment for adults with asthma. FDA. Published January 11, 2023. Accessed January 2, 2024. https://www.fda.gov/drugs/news-events-human-drugs/fda-approves-drug-combination-treatment-adults-asthma.

AstraZeneca

AIRSUPRA®
(albuterol 90 mcg/budesonide 80 mcg)
Inhalation Aerosol

AIRSUPRA® (albuterol and budesonide) inhalation aerosol, for oral inhalation use

Initial U.S. Approval: 2023

Brief Summary of Prescribing Information

For complete prescribing information consult official package insert.

INDICATIONS AND USAGE

AIRSUPRA is indicated for the as-needed treatment or prevention of bronchoconstriction and to reduce the risk of exacerbations in patients with asthma 18 years of age and older.

DOSAGE AND ADMINISTRATION

Recommended Dosage and Administration

The recommended dosage of AIRSUPRA is albuterol 180 mcg and budesonide 160 mcg (administered as 2 actuations of AIRSUPRA [albuterol/budesonide 90 mcg/80 mcg]) as needed for asthma symptoms by oral inhalation. Do not take more than 6 doses (12 inhalations) in a 24-hour period *[see Warnings and Precautions (5.4) in the full Prescribing Information]*.

Priming Before Use

- Priming AIRSUPRA is essential to ensure appropriate drug content in each actuation. Prime AIRSUPRA before using for the first time. To prime AIRSUPRA, release 4 sprays into the air away from the face, shaking well before each spray.
- AIRSUPRA must be re-primed when the inhaler has not been used for more than 7 days, is dropped, or after cleaning. To re-prime AIRSUPRA, release 2 sprays into the air away from the face, shaking well before each spray.

Dose Counter

The canister has an attached dose indicator which indicates how many inhalations remain. The dose indicator pointer will move after every actuation. The pointer will show the number of inhalations remaining in the canister. When nearing the end of the usable inhalations, the color behind the number in the dose indicator display window changes to yellow. AIRSUPRA should be discarded when the pointer reaches zero.

CONTRAINDICATIONS

AIRSUPRA is contraindicated in patients with a history of hypersensitivity to albuterol, budesonide, or any of the excipients *[see Warnings and Precautions (5.5), Description (11) in the full Prescribing Information]*.

WARNINGS AND PRECAUTIONS

Deterioration of Asthma

Asthma may deteriorate acutely over a period of hours or chronically over several days or longer. If the patient continues to experience symptoms after using AIRSUPRA or requires more doses of AIRSUPRA than usual, this may be a marker of destabilization of asthma and requires evaluation of the patient and their treatment regimen.

Paradoxical Bronchospasm

AIRSUPRA can produce paradoxical bronchospasm, which may be life threatening. If paradoxical bronchospasm occurs following dosing with AIRSUPRA, it should be discontinued immediately, and alternative therapy should be instituted. It should be recognized that paradoxical bronchospasm, when associated with inhaled formulations, frequently occurs with the first use of a new canister.

Cardiovascular Effects

AIRSUPRA, like other drugs containing beta$_2$-adrenergic agonists, can produce clinically significant cardiovascular effects in some patients as measured by increases in pulse rate, blood pressure, and/or other symptoms. If such effects occur, AIRSUPRA may need to be discontinued. In addition, beta-agonists have been reported to produce electrocardiogram (ECG) changes, such as flattening of the T wave, prolongation of the QTc interval, and ST-segment depression. The clinical significance of these findings is unknown. Therefore, AIRSUPRA, like all sympathomimetic amines, should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension.

Do Not Exceed Recommended Dosage

As with other inhaled drugs containing beta-adrenergic agents, AIRSUPRA should not be used more than the maximum daily dose *[see Dosage and Administration (2.1) in the full Prescribing Information]*, as an overdose may result. Clinically significant cardiovascular effects and fatalities have been reported in association with excessive use of inhaled sympathomimetic drugs.

Hypersensitivity Reactions, Including Anaphylaxis

Hypersensitivity reactions can occur after administration of albuterol sulfate and budesonide, components of AIRSUPRA, as demonstrated by cases of anaphylaxis, angioedema, bronchospasm, oropharyngeal edema, rash, and urticaria. Discontinue AIRSUPRA if such reactions occur *[see Contraindications (4) in the full Prescribing Information]*.

Risk of Sympathomimetic Amines with Certain Coexisting Conditions

AIRSUPRA, like all therapies containing sympathomimetic amines, should be used with caution in patients with convulsive disorders, hyperthyroidism, or diabetes mellitus and in patients who are unusually responsive to sympathomimetic amines. Large doses of intravenous albuterol have been reported to aggravate preexisting diabetes mellitus and ketoacidosis.

Hypokalemia

Beta-adrenergic agonist medicines may produce significant hypokalemia in some patients, possibly through intracellular shunting, which has the potential to produce adverse cardiovascular effects *[see Warnings and Precautions (5.3), Clinical Pharmacology (12.1) in the full Prescribing Information]*. The decrease in serum potassium is usually transient, not requiring supplementation.

Immunosuppression and Risk of Infections

Patients who are using drugs that suppress the immune system are more susceptible to infection. Chicken pox and measles, for example, can have a more serious or even fatal course in susceptible patients using corticosteroids. In patients who have not had these diseases or been properly immunized, particular care should be taken to avoid exposure. How the dose, route, and duration of corticosteroid administration affects the risk of developing a disseminated infection is not known. The contribution of the underlying disease and/or prior corticosteroid treatment to the risk is also not known. If a patient is exposed to chicken pox, prophylaxis with varicella zoster immune globulin (VZIG) may be indicated. If exposed to measles, prophylaxis with pooled intramuscular immunoglobulin (IG) may be indicated (see the respective Prescribing Information for VZIG and IG). If chicken pox develops, treatment with antiviral agents may be considered.

Inhaled corticosteroids should be used with caution, if at all, in patients with active or quiescent tuberculosis infection of the respiratory tract; untreated systemic fungal, bacterial, viral, or parasitic infections; or ocular herpes simplex.

Oropharyngeal Candidiasis

AIRSUPRA contains budesonide, an inhaled corticosteroid (ICS). Localized infections of the mouth and pharynx with *Candida albicans* have occurred in patients treated with ICS agents. Monitor patients periodically. When such an infection develops, it should be treated with appropriate local or systemic (i.e., oral) antifungal therapy while treatment with AIRSUPRA continues. In some cases, therapy with AIRSUPRA may need to be interrupted. Advise the patient to rinse his/her mouth with water, if available, without swallowing following administration of AIRSUPRA to help reduce the risk of oropharyngeal candidiasis.

Hypercorticism and Adrenal Suppression

Budesonide, a component of AIRSUPRA, will often help control asthma symptoms with less suppression of hypothalamic-pituitary-adrenal (HPA) function than therapeutically equivalent oral doses of prednisone. Since budesonide is absorbed into the circulation and can be systemically active at higher doses, the beneficial effects of AIRSUPRA in minimizing HPA dysfunction may be expected only when recommended dosages are not exceeded. Since individual sensitivity to effects on cortisol production exists, physicians should consider this information when prescribing AIRSUPRA.

Because of the possibility of systemic absorption of ICS, patients treated with AIRSUPRA should be observed carefully for any evidence of systemic corticosteroid effects. Particular care should be taken in observing patients postoperatively or during periods of stress for evidence of inadequate adrenal response.

It is possible that systemic corticosteroid effects such as hypercorticism and adrenal suppression (including adrenal crisis) may appear in a small number of patients who are sensitive to these effects. If such effects occur, appropriate therapy should be initiated as needed.

Reduction in Bone Mineral Density

Decreases in bone mineral density (BMD) have been observed with long-term administration of products containing ICS. The clinical significance of small changes in BMD with regard to long-term consequences such as fracture is unknown. Patients with major risk factors for decreased bone mineral content, such as prolonged immobilization, family history of osteoporosis, post-menopausal status, tobacco use, advanced age, poor nutrition, or chronic use of drugs that can reduce bone mass (e.g., anticonvulsants, oral corticosteroids) should be monitored and treated with established standards of care.

Glaucoma and Cataracts

Glaucoma, increased intraocular pressure, and cataracts have been reported following the long-term administration of ICS, including budesonide, a component of AIRSUPRA. Consider referral to an ophthalmologist in patients who develop ocular symptoms.

Drug Interactions with Strong Cytochrome P450 3A4 Inhibitors

Caution should be exercised when considering the co-administration of AIRSUPRA with long-term ketoconazole and other known strong CYP3A4 inhibitors (e.g., ritonavir, atazanavir, clarithromycin, indinavir, itraconazole, nefazodone, nelfinavir, saquinavir, telithromycin) because adverse effects related to increased systemic exposure to budesonide may occur *[see Drug Interactions (7.1), Clinical Pharmacology (12.3) in the full Prescribing Information]*.

Effects on Growth in Pediatric Patients

Orally inhaled corticosteroids, including budesonide, may cause a reduction in growth velocity when administered to pediatric patients. The safety and effectiveness of AIRSUPRA have not been established in pediatric patients, and AIRSUPRA is not indicated for use in this population *[see Use in Specific Populations (8.4) in the full Prescribing Information]*.

ADVERSE REACTIONS

The following clinically significant adverse reactions are described elsewhere in labeling:

- Deterioration of Asthma *[see Warnings and Precautions (5.1) in the full Prescribing Information]*
- Paradoxical Bronchospasm *[see Warnings and Precautions (5.2) in the full Prescribing Information]*
- Cardiovascular Effects *[see Warnings and Precautions (5.3) in the full Prescribing Information]*
- Hypersensitivity Reactions, including Anaphylaxis *[see Warnings and Precautions (5.5) in the full Prescribing Information]*
- Hypokalemia *[see Warnings and Precautions (5.7) in the full Prescribing Information]*
- Immunosuppression and Risk of Infections *[see Warnings and Precautions (5.8) in the full Prescribing Information]*
- Oropharyngeal Candidiasis *[see Warnings and Precautions (5.9) in the full Prescribing Information]*
- Hypercorticism and Adrenal Suppression *[see Warnings and Precautions (5.10) in the full Prescribing Information]*
- Reduction in Bone Mineral Density *[see Warnings and Precautions (5.11) in the full Prescribing Information]*
- Glaucoma and Cataracts *[see Warnings and Precautions (5.12) in the full Prescribing Information]*
- Effects on Growth in Pediatric Patients *[see Warnings and Precautions (5.14) in the full Prescribing Information]*

Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

The safety of AIRSUPRA is based on data from 2 trials: MANDALA and DENALI *[see Clinical Studies (14) in the full Prescribing Information]*. All reported safety data is based on patients who received AIRSUPRA 180 mcg/160 mcg.

In MANDALA, in which patients with moderate to severe asthma were administered AIRSUPRA as needed, a total of 1015 patients 12 to 84 years of age (mean 51 years) received at least one dose of AIRSUPRA and participated in the study for a mean duration of 310 days. Of these, 905 patients were exposed for at least 24 weeks and 323 patients had exposure for at least 1 year. The mean daily use was 2.6 actuations. On the majority of study days, patients used 2 or less

actuations; more than 8 actuations were used on less than 2% of study days. AIRSUPRA is not approved for patients 12 to 17 years of age.

The incidence of common adverse reactions in MANDALA is described in Table 1.

Table 1 Summary of Adverse Reactions with AIRSUPRA Reported in ≥ 1% of Patients (MANDALA)

Adverse Reaction	AIRSUPRA 180 mcg/160 mcg N = 1015 (%)	AS MDI[1] 180 mcg N = 1015 (%)
Headache	44 (4.3)	50 (4.9)
Oral candidiasis[2]	13 (1.3)	5 (0.5)
Cough	10 (1.0)	11 (1.1)

[1] Albuterol Metered Dose Inhaler = AS MDI

[2] Oral candidiasis also includes those reactions reported under the preferred term oropharyngeal candidiasis.

The safety profile of AIRSUPRA in MANDALA was similar across the 2 treatment groups irrespective of background ICS dose.

In DENALI, AIRSUPRA 180 mcg/160 mcg was administered 4 times a day for 12 weeks. A total of 197 patients 13 to 81 years of age (mean 50 years) with mild to moderate asthma received at least 1 dose of AIRSUPRA. The adverse reactions profile was similar to MANDALA except for the following adverse reactions for AIRSUPRA with an incidence ≥ 1.0% that exceeded the incidence in MANDALA: headache (5.1%), dysphonia (2.0%), and oral/oropharyngeal candidiasis (1.5%), compared to headache (7.1%), dysphonia (0%), and oral/oropharyngeal candidiasis (0%) in the placebo arm.

Postmarketing Experience

The following adverse reactions have been identified during postapproval use of budesonide or albuterol. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Cardiovascular disorders: myocardial ischemia, tremor, tachycardia, palpitations, extrasystoles, arrhythmias (including atrial fibrillation, supraventricular tachycardia), syncope, hypertension, peripheral vasodilatation

Endocrine disorders: signs or symptoms of systemic glucocorticosteroid effect (including hypofunction of the adrenal gland and reduction of growth rate)

Eye disorders: cataracts, glaucoma, increased intraocular pressure

Immune system disorders: immediate and delayed hypersensitivity reactions (including anaphylactic reaction, angioedema, bronchospasm, rash, contact dermatitis and urticaria)

General disorders: fever, weight gain, taste perversion, flu syndrome

Gastrointestinal disorders: nausea, vomiting, dyspepsia, diarrhea

Infections: sinusitis, pharyngitis, respiratory tract infection, nasopharyngitis, gastroenteritis, otitis media, laryngitis

Metabolic disorders: hypokalemia, metabolic acidosis

Musculoskeletal disorders: hypertonia, musculoskeletal pain, myalgia, asthenia, arthralgia, muscle cramps, fracture

Neurological or psychiatric system disorders: migraine, dizziness, central nervous system stimulation, insomnia, hyperactivity, psychiatric symptoms (including psychosis, depression, aggressive reactions, irritability, nervousness, restlessness, behavioral disturbances and anxiety)

Respiratory, thoracic, and mediastinal disorders: rhinitis, nasal congestion, throat irritation, oropharyngeal edema, upper respiratory inflammation, drying or irritation of the oropharynx

Skin and subcutaneous tissue disorders: skin bruising, ecchymosis

DRUG INTERACTIONS

No formal drug interaction studies have been performed with AIRSUPRA.

Inhibitors of Cytochrome P450 3A4

The main route of metabolism of corticosteroids, including budesonide, a component of AIRSUPRA, is via cytochrome P450 (CYP) isoenzyme 3A4 (CYP3A4). After oral administration of ketoconazole, a strong inhibitor of CYP3A4, the mean plasma concentration of orally administered budesonide increased. Concomitant administration of a CYP3A4 inhibitor may inhibit the metabolism of, and increase the systemic exposure to, budesonide. Caution should be exercised when considering the co-administration of AIRSUPRA with long-term ketoconazole and other known strong CYP3A4 inhibitors (e.g., ritonavir, atazanavir, clarithromycin, indinavir, itraconazole, nefazodone, nelfinavir, saquinavir, telithromycin) *[see Warnings and Precautions (5.11) in the full Prescribing Information]*.

Use with Other Short-Acting Bronchodilators

AIRSUPRA contains the short-acting beta-agonist, albuterol. Therefore, concomitant use of additional beta-agonists with AIRSUPRA should be used judiciously to prevent beta-agonist overdose.

Beta-Blockers

Beta-adrenergic receptor blocking agents not only block the pulmonary effect of beta-agonists, such as albuterol, a component of AIRSUPRA, but may also produce severe bronchospasm in patients with asthma. Therefore, patients with asthma should not normally be treated with beta-blockers. However, under certain circumstances, e.g., as prophylaxis after myocardial infarction, there may be no acceptable alternatives to the use of beta-adrenergic-blocking agents in these patients. In this setting, consider cardioselective beta-blockers, although they should be administered with caution.

Diuretics

The ECG changes and/or hypokalemia which may result from the administration of non-potassium-sparing diuretics (such as loop or thiazide diuretics) can be acutely worsened by beta-agonists, especially when the recommended dose of the beta-agonist is exceeded. Although the clinical significance of these effects is not known, caution is advised in the coadministration of AIRSUPRA with non-potassium-sparing diuretics. Consider monitoring potassium levels.

Digoxin

Mean decreases of 16% and 22% in serum digoxin levels were demonstrated after single-dose intravenous and oral administration of albuterol, respectively, to normal volunteers who had received digoxin for 10 days. The clinical significance of these findings for patients with obstructive airway disease who are receiving albuterol and digoxin on a chronic basis is unclear. Nevertheless, it would be prudent to carefully evaluate the serum digoxin levels in patients who are currently receiving digoxin and AIRSUPRA.

Monoamine Oxidase Inhibitors or Tricyclic Antidepressants

AIRSUPRA should be administered with extreme caution to patients being treated with monoamine oxidase inhibitors or tricyclic antidepressants, or within 2 weeks of discontinuation of such agents, because the action of albuterol on the cardiovascular system may be potentiated.

USE IN SPECIFIC POPULATIONS

Pregnancy

Pregnancy Exposure Registry

There is a pregnancy exposure registry that monitors pregnancy outcomes in women exposed to asthma medications during pregnancy. For more information, contact the MotherToBaby Pregnancy Studies conducted by the Organization of Teratology Information Specialists at 1-877-311-8972 or visit https://mothertobaby.org/ongoing-study/asthma/.

Risk Summary

Available data from published case series, epidemiological studies and reviews with budesonide use in pregnant women have not identified a drug-related risk of major birth defects, miscarriage or other adverse maternal or fetal outcomes. Available data from epidemiological studies and postmarketing case reports of pregnancy outcomes following inhaled albuterol use do not consistently demonstrate a risk of major birth defects or miscarriage. The available epidemiological studies have methodologic limitations, including inconsistent comparator groups, definitions of outcomes, and assessment of disease impact. There are risks to the mother and fetus associated with asthma in pregnancy *(see Clinical Considerations)*. Animal reproduction studies have not been conducted with AIRSUPRA, however, animal studies are available with its individual components, albuterol and budesonide.

Administration of albuterol to mice and rabbits during the period of organogenesis revealed evidence of adverse developmental outcomes (cleft palate in mice, delayed ossification in rabbits) at less than maximum recommended human daily inhalation dose (MRHDID) (*see Data*).

In animal reproduction studies, budesonide, administered by the subcutaneous route, caused structural abnormalities, was embryocidal, and reduced fetal weights in rats and rabbits at less than the MRHDID in adults, but these effects were not seen in rats that received inhaled doses approximately 2.5 times the MRHDID in adults *(see Data)*. Experience with oral corticosteroids suggests that rodents are more prone to structural abnormalities from corticosteroid exposure than humans.

The background risk of major birth defects and miscarriage of the indicated populations is unknown. All pregnancies have a background risk of birth defect, loss, or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively.

Clinical Considerations

Disease-Associated Maternal and/or Embryo/Fetal risk

In women with poorly or moderately controlled asthma, there is an increased risk of several perinatal adverse outcomes such as preeclampsia in the mother and prematurity, low birth weight, and small for gestational age in the neonate. Pregnant women with asthma should be closely monitored and medication adjusted as necessary to maintain optimal asthma control.

Labor or Delivery

Because of the potential for beta-agonist interference with uterine contractility, use of AIRSUPRA during labor should be restricted to those patients in whom the benefits clearly outweigh the risk. AIRSUPRA has not been approved for the management of pre-term labor. Serious adverse reactions, including pulmonary edema, have been reported during or following treatment of premature labor with $beta_2$-agonists, including albuterol.

Data

Animal Data

Albuterol

In a study in pregnant mice, subcutaneously administered albuterol sulfate produced cleft palate formation in 5 of 111 (4.5%) fetuses at an exposure less than the MRHDID in adults (on a mg/m^2 basis at a maternal dose of 0.25 mg/kg) and in 10 of 108 (9.3%) fetuses at approximately 9 times the MRHDID in adults (on a mg/m^2 basis at a maternal dose of 2.5 mg/kg). Cleft palate also occurred in 22 of 72 (30.5%) fetuses from females treated subcutaneously with isoproterenol, another $beta_2$-agonist.

In a study in pregnant rabbits, orally administered albuterol sulfate produced cranioschisis in 7 of 19 fetuses (37%) at approximately 750 times the MRHDID in adults (on a mg/m^2 basis at a maternal dose of 50 mg/kg).

In a study in pregnant rabbits, an albuterol/HFA-134a formulation administered by inhalation produced enlargement of the frontal portion of the fetal fontanelles at approximately one third of the MRHDID on a mg/m^2 basis.

A study in which pregnant rats were dosed with radiolabeled albuterol sulfate demonstrated that drug-related material is transferred from the maternal circulation to the fetus.

Budesonide

In a fertility and reproduction study, male rats were subcutaneously dosed with budesonide for 9 weeks and females for 2 weeks prior to pairing and throughout the mating period. Females were dosed up until weaning of their offspring. Budesonide caused a decrease in prenatal viability and viability in the pups at birth and during lactation, along with a decrease in maternal body-weight gain, at doses 0.2 times the MRHDID in adults (on a mcg/m^2 basis at maternal subcutaneous doses of 20 mcg/kg/day and above). No such effects were noted at a dose 0.05 times the MRHDID in adults (on a mcg/m^2 basis at a maternal subcutaneous dose of 5 mcg/kg/day).

In an embryo-fetal development study in pregnant rabbits dosed during the period of organogenesis from gestation days 6-18, budesonide produced fetal loss, decreased fetal weight, and skeletal abnormalities at doses 0.5 times the MRHDID in

adults (on a mcg/m^2 basis at a maternal subcutaneous dose of 25 mcg/kg/day). In an embryo-fetal development study in pregnant rats dosed during the period of organogenesis from gestation days 6-15, budesonide produced similar adverse fetal effects at doses approximately 5 times the MRHDID in adults (on a mcg/m^2 basis at a maternal subcutaneous dose of 500 mcg/kg/day). In another embryo-fetal development study in pregnant rats, no structural abnormalities or embryocidal effects were seen at doses approximately 2.5 times the MRHDID in adults (on a mcg/m^2 basis at maternal inhalation doses up to 250 mcg/kg/day).

In a peri- and post-natal development study, rats were dosed from gestation day 15 to postpartum day 21. Budesonide had no effects on delivery but did have an effect on growth and development of offspring. Offspring survival was reduced and surviving offspring had decreased mean body weights at birth and during lactation at doses 0.2 times the MRHDID in adults and higher (on a mcg/m^2 basis at maternal subcutaneous doses of 20 mcg/kg/day and higher). These findings occurred in the presence of maternal toxicity.

Lactation

Risk Summary

There are no available data on the effects of AIRSUPRA on the breastfed child or on milk production.

There are no available data on the presence of albuterol in human milk, the effects on the breastfed child, or the effects on milk production. However, plasma levels of albuterol after inhaled therapeutic doses are low in humans, and if present in breast milk, are likely to be correspondingly low.

Budesonide, like other inhaled corticosteroids, is present in human milk *(see Data)*.

The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for AIRSUPRA and any potential adverse effects on the breastfed child from AIRSUPRA or from the underlying maternal condition.

Data

One published study reports that budesonide is present in human milk following maternal inhalation of budesonide, which resulted in infant doses approximately 0.3% to 1% of the maternal weight-adjusted dosage and a milk to plasma ratio was approximately 0.5. Budesonide was not detected in plasma, and no adverse events were noted in the breastfed infants following maternal use of inhaled budesonide.

For AIRSUPRA, the dose of budesonide available to the infant in breast milk, as a percentage of the maternal dose, would be expected to be similar.

Budesonide levels in plasma samples obtained from five infants at about 90 minutes after breastfeeding (and about 140 minutes after drug administration to the mother) were below quantifiable levels (< 0.02 nmol/L in four infants and < 0.04 nmol/L in one infant).

Pediatric Use

The safety and effectiveness of AIRSUPRA have not been established in pediatric patients. A limited number of pediatric patients (4 to 17 years of age) were enrolled in the efficacy trial (MANDALA) to evaluate AIRSUPRA to reduce the risk of severe asthma exacerbations. The primary efficacy endpoint was time to first severe asthma exacerbation. Results showed there were 9 patients with severe exacerbation events in 34 patients 12 to 17 years of age treated with AIRSUPRA 180 mcg/160 mcg and 7 patients with severe exacerbation events in 34 patients treated with albuterol (AS MDI) [HR 1.44 (0.54, 3.87)]. There were 11 patients with severe exacerbation events in 41 patients 4 to 11 years of age treated with albuterol/budesonide (AS-BD MDI) 180 mcg/80 mcg and 10 in the 42 patients 4 to 11 years of age treated with AS MDI [HR: 1.09 (0.46, 2.56)]. These data are inadequate to make a determination regarding the safety or effectiveness of AIRSUPRA or AS-BD 180 mcg/80 mcg in pediatric patients 4 to 17 years of age *[see Clinical Studies (14) in the full Prescribing Information]*.

Controlled clinical studies have shown that ICS agents, including budesonide, one of the components of AIRSUPRA, may cause a reduction in growth velocity in pediatric patients. The effects of long-term treatment of pediatric patients with ICS on final adult height are not known. *[see Warnings and Precautions (5.14) in the full Prescribing Information]*

Geriatric Use

There were 741 patients 65 years of age and older in the clinical studies for asthma *[see Clinical Studies (14) in the full Prescribing Information]*. Of the total number of AIRSUPRA-treated patients in these studies, 231 (19%) were 65 years of age and older, while 41 (3%) were 75 years of age and older. In general, no differences in safety or effectiveness were observed between these patients and younger patients, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

As with other products containing beta$_2$-agonists, special caution should be observed when using AIRSUPRA in geriatric patients who have concomitant cardiovascular disease that could be adversely affected by this class of drug.

All beta$_2$-adrenergic agonists, including albuterol, are known to be substantially excreted by the kidney, and the risk of toxic reactions may be greater in patients with impaired renal function. Because geriatric patients are more likely to have decreased renal function, care should be taken when dosing, and it may be useful to monitor renal function.

Hepatic Impairment

Formal pharmacokinetic studies using AIRSUPRA have not been conducted in patients with hepatic impairment. However, since budesonide is predominantly cleared by hepatic metabolism, impairment of liver function may lead to accumulation of budesonide in the plasma. Therefore, patients with hepatic disease should be closely monitored.

Renal Impairment

Formal pharmacokinetic studies using AIRSUPRA have not been conducted in patients with renal impairment.

OVERDOSAGE

AIRSUPRA contains both albuterol and budesonide; therefore, the risks associated with overdosage for the individual components described below apply to AIRSUPRA.

Albuterol

The expected symptoms with overdosage are those of excessive beta-adrenergic stimulation and/or occurrence or exaggeration of any of the symptoms of beta-adrenergic stimulation (e.g., seizures, angina, hypertension or hypotension, tachycardia with rates up to 200 beats/minute, arrhythmias, nervousness, headache, tremor, muscle cramps, dry mouth, palpitation, nausea, dizziness, fatigue, malaise, insomnia, hyperglycemia, and metabolic acidosis).

Hypokalemia may also occur. As with all sympathomimetic medications, cardiac arrest and even death may be associated with abuse of AIRSUPRA.

Treatment consists of discontinuation of AIRSUPRA together with appropriate symptomatic therapy. The judicious use of a cardioselective beta-receptor blocker may be considered, bearing in mind that such medication can produce bronchospasm. There is insufficient evidence to determine if dialysis is beneficial for overdosage of AIRSUPRA.

Budesonide

If used at excessive doses for prolonged periods, systemic corticosteroid effects such as hypercorticism may occur *[see Warnings and Precautions (5.10) in the full Prescribing Information]*.

PATIENT COUNSELING INFORMATION

Advise the patient to read the FDA-approved patient labeling (Patient Information and Instructions for Use in the full Prescribing Information).

Deterioration of Asthma

Inform patients to seek medical attention immediately if treatment with AIRSUPRA becomes less effective for symptomatic relief, and/or symptoms become worse *[see Warnings and Precautions (5.1) in the full Prescribing Information]*.

Paradoxical Bronchospasm

Instruct patients to discontinue AIRSUPRA and contact their healthcare provider right away if they develop paradoxical bronchospasm *[see Warnings and Precautions (5.2) in the full Prescribing Information]*.

Do Not Exceed Recommended Dosage

Instruct patients concerning the recommended dosage of AIRSUPRA and not to exceed 6 doses (12 inhalations) in a 24-hour period *[see Dosage and Administration (2.1), Warnings and Precautions (5.4) in the full Prescribing Information]*.

Hypersensitivity Reactions, Including Anaphylaxis

Advise patients to contact their healthcare provider and discontinue AIRSUPRA if hypersensitivity reactions (e.g., anaphylaxis, rash, urticaria, angioedema, and bronchospasm) occur with AIRSUPRA use *[Warnings and Precautions (5.5) in the full Prescribing Information]*.

Priming and Cleaning Inhaler

Instruct patients to prime the inhaler before using for the first time, when the inhaler has not been used for more than 7 days, is dropped, or after cleaning and to shake well before each spray.

To ensure proper dosing and to prevent actuator mouthpiece blockage, instruct patients how to clean the actuator *[see Dosage and Administration (2.1) and Instructions for Use in the full Prescribing Information]*.

Use with Other Short-Acting Bronchodilators

Advise patients concerning the appropriate use of other short-acting bronchodilators while using AIRSUPRA *[see Drug Interactions (7.2) in the full Prescribing Information]*.

Immunosuppression and Risk of Infections

Warn patients who are on immunosuppressant doses of corticosteroids to avoid exposure to chickenpox or measles and, if exposed, to consult their physician without delay. Patients should be informed of potential worsening of existing tuberculosis, fungal, bacterial, viral, or parasitic infections, or ocular herpes simplex *[see Warnings and Precautions (5.8) in the full Prescribing Information]*.

Oropharyngeal Candidiasis

Patients should be advised that localized infections with *Candida albicans* occurred in the mouth and pharynx in some patients. Advise patients to rinse the mouth with water, if available, without swallowing after AIRSUPRA inhalation to help reduce the risk of thrush *[see Warnings and Precautions (5.9) in the full Prescribing Information]*.

Hypercorticism and Adrenal Suppression

Advise patients that AIRSUPRA may cause systemic corticosteroid effects of hypercorticism and adrenal suppression *[see Warnings and Precautions (5.10) in the full Prescribing Information]*.

Reduction in Bone Mineral Density

Advise patients who are at an increased risk for decreased BMD that the use of AIRSUPRA may pose an additional risk *[see Warnings and Precautions (5.11) in the full Prescribing Information]*.

Glaucoma and Cataracts

Inform patients that long-term use of AIRSUPRA may increase the risk of increased intraocular pressure, glaucoma, and cataracts; consider regular eye examinations *[see Warnings and Precautions (5.12) in the full Prescribing Information]*.

Pregnancy

Advise pregnant women that there is a pregnancy exposure registry that monitors pregnancy outcomes in women exposed to asthma medications during pregnancy and to contact the MotherToBaby Pregnancy Studies at 1-877-311-8972 or visit https://mothertobaby.org/ongoing-study/asthma/.

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See CME Quiz Questions on page 11.

Urgent Care Evaluation and Management Of Proximal 5th Metatarsal Fractures

Urgent Message: It's important to recognize the difference between a proximal 5th metatarsal fracture of the tuberosity alone and a proximal metaphyseal fracture, commonly referred to as a "Jones fracture." A Jones fracture requires full immobilization with urgent surgical referral.

Michael B. Weinstock, MD; Kelly Moore, BS

Citation: Weinstock M, Moore K. Urgent Care Evaluation and Management Of Proximal 5th Metatarsal Fractures. *J Urgent Care Med.* 2024 18(7):25-28

Editors' Note: *While the images presented here are authentic, the patient case scenarios are hypothetical.*

Questions for the Clinician at the Bedside

1. What are the common mechanisms for proximal 5th metatarsal fractures?
2. What are the differences between proximal 5th metatarsal avulsion fracture and Jones fractures?
3. Which 5th metatarsal fractures may require more than conservative management?
4. When does a patient with a foot fracture need emergent referral to the emergency department (ED)?

Clinical Scenario

A previously healthy 46-year-old man presents to the urgent care 3 hours after injuring his left foot while playing basketball. He landed while his foot was plantarflexed and inverted. He complains of pain over the lateral ankle and foot, but he can walk. He denies any paresthesias or numbness as well as pain in the midfoot, lower leg, or knee.

On exam, the patient's vitals are normal, and he's in no distress. He can bear some weight but walks with antalgia favoring the injured leg. The ankle is swollen laterally with ecchymoses and there is tenderness to palpation over the lateral malleolus and the proximal 5th metatarsal. There is no pain with palpation of the knee joint, medial malleolus, or the midfoot. The patient does not tolerate laxity testing. The skin is intact, and sensation and pulses are normal.

An x-ray (XR) is performed which demonstrates a fracture of the proximal 5th metatarsal bone (**Image 1**).

Note that the fracture line extends through the tuberosity but does not involve the metaphysis or proximal diaphysis.

Relevant Anatomy

The 5th metatarsal is divided into five zones (**Image 2-3**). From proximal to distal, these are:

- Tuberosity (also known as "styloid")
- Metaphysis (widened area where articulation with the cuboid and 4th metatarsal occur)
- Proximal diaphysis (elongated, narrow aspect)
- Neck
- Head

The vascular supply of the proximal 5th metatarsal

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Image 1. Avulsion Fracture Of The Tuberosity Of The Proximal 5th Metatarsal Bone

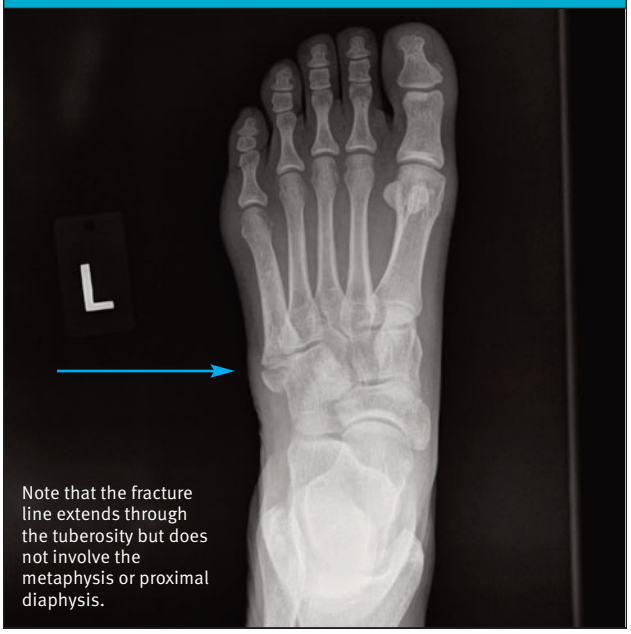


Image 2. Lateral Aspect of Foot

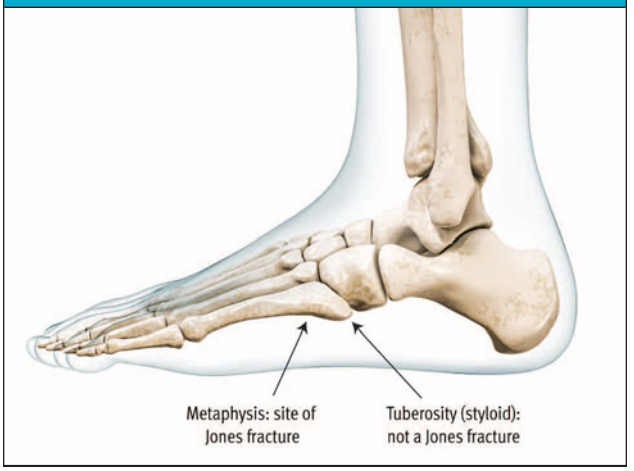
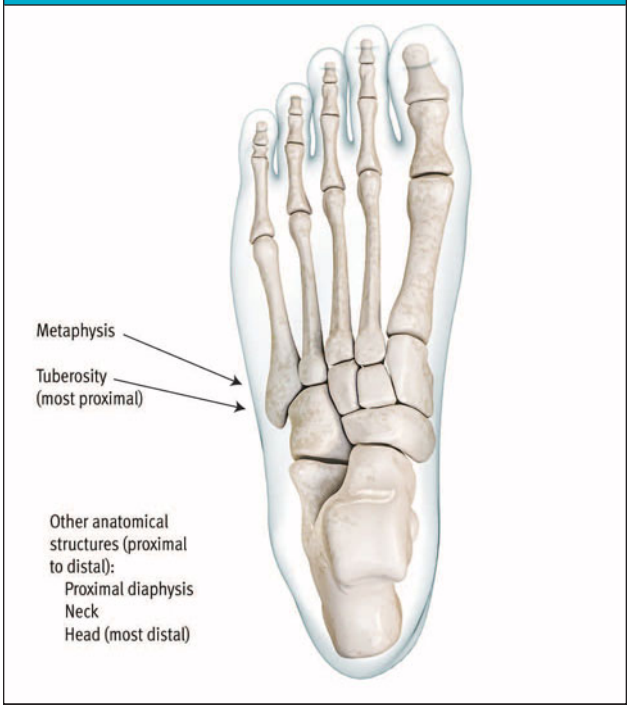


Image 3. Bones of the Left Foot, Dorsal Surface



arises from the metaphyseal arteries. The diaphysis is supplied by the nutrient artery.

A proximal 5th metatarsal fracture can be divided into 3 distinct categories based upon the anatomic location of the fracture (**Image 1**):

1. Tuberosity (avulsion fracture)
2. Metaphysis (Jones fracture)
3. Proximal diaphysis (site of a "dancer's fracture")

The primary differentiation is an avulsion fracture (ie, isolated tuberosity fracture) from a metaphyseal fracture—also known as "Jones fracture" (**Image 4**).

A Jones fracture consists of a fracture through the metaphysis.[1] This was originally described by British surgeon Sir Robert Jones in 1902 who reported on 4 patients—one of whom was actually himself—who had sustained injuries to the proximal 5th metatarsal.[2] While not the case for each of these original patients, in modern usage, the term "Jones fracture" is reserved for fractures through the metaphysis, rather than avulsion fractures isolated to the proximal tuberosity (**Image 1**).

To avoid confusion, we suggest avoiding the use of eponyms and recommend describing the fracture site (eg, proximal metaphyseal vs. tuberosity avulsion fracture).

History

A Jones fracture is typically sustained after a twisting injury or landing after a jump, whereas the most common presentation of an avulsion fracture of the proximal 5th metatarsal tuberosity occurs with sudden pain after *inversion and supination injury* of the foot.[3] The patient in the above scenario presented with pain over the lateral ankle and foot. Clinicians are encouraged to inquire about pain proximal and distal to this site and obtain details regarding the ankle pain itself. Without a history of an *acute* trauma, the differential may be expanded to include additional considerations for lateral

foot pain such as chronic stress fracture, which commonly occur at the proximal diaphysis and present with a more gradual onset of pain. Non-traumatic causes for foot pain that might be considered include septic arthritis, cellulitis, and gout.

Physical Examination

Physical exam should focus on the affected lower extremity. It is important to expose and examine the entire lower leg, from the distal femur to the toes. Any swelling, erythema, ecchymosis, or tenting of the skin is important to note. Ensure the skin is intact and there are no wounds. Palpate the foot for specific areas of tenderness as well as the entire ankle, lower leg, and knee. Significant swelling and tenderness of the midfoot is concerning for a more significant injury such as a Lisfranc fracture or dislocation. Clinicians are encouraged to assess gait and the ability to bear weight as well. Assess and document neurovascular status. If there is a question as to anatomy specific to the individual, consider examining the contralateral foot.

Though our hypothetical patient had foot pain and not ankle pain, following is a review of the Ottawa Ankle Rule:

The Ottawa Ankle Rule (OAR) was created to determine which patients with ankle injuries could have fractures excluded without imaging. If *any* of the following criteria are present, it is recommended to obtain a radiograph (XR):

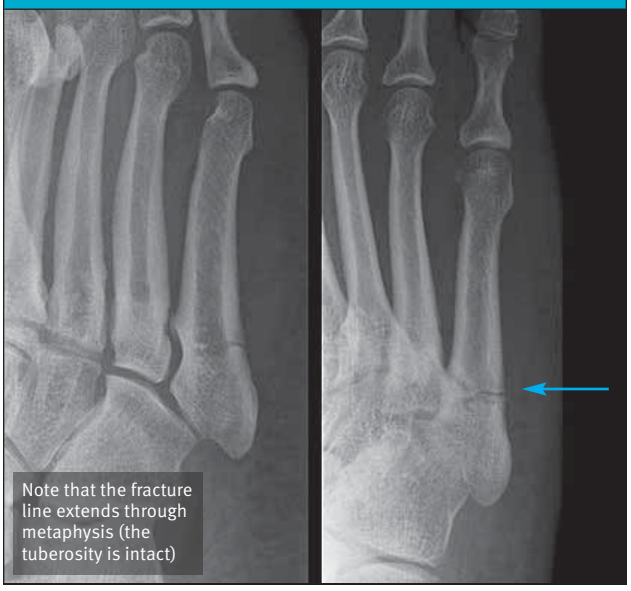
- Inability to bear weight both at the time of the injury *and* at the time of clinician evaluation (ie, inability to walk four steps or to bear weight on the affected ankle)
- Tenderness at the posterior edge or tip of lateral malleolus
- Tenderness at the posterior edge or tip of medial malleolus

The OAR has been shown to decrease the use of imaging and has been validated in multiple different patient populations and settings.[4,5]

Testing

Differentiation between a tuberosity avulsion fracture and a proximal metaphyseal fracture (ie, Jones fracture) is the most critical assessment in urgent care. Avulsion fractures are generally managed conservatively, whereas proximal metaphyseal fractures benefit from referral to an orthopedic surgeon or podiatrist. **Image 1** demonstrates an avulsion fracture of the tuberosity where the fracture line extends through the tuberosity only and not through the metaphysis. **Image 4**, on the other hand, demonstrates a proximal metaphyseal fracture

Image 4. Two Images of a Jones/Metaphyseal Fracture.



where the fracture line extends through the metaphysis and typically reaches the 4th metatarsal. If there are equivocal findings, comparison to an x-ray of the uninjured foot may be helpful.

Indications for Referral to the ED

1. Open fracture
2. Concern for Lisfranc injury
3. Concern for acute compartment syndrome of the foot
4. Uncontrolled pain or neurovascular compromise (commonly associated with compartment syndromes)[6]
5. Concern for dislocation/need for immediate reduction

Management

For the UC clinician, the initial management of all 5th metatarsal fracture will be analgesia, ice, and elevation. Immobilization is also important but will differ based on the fracture type involved.

- **Avulsion Fractures of the Tuberosity**
  Immobilization with a hard-soled shoe or walking boot is generally adequate for these fractures. Early ambulation as tolerated immediately after the injury with protected and judicious, non-impact weightbearing is recommended for those with avulsion fractures. Shorter periods of non-weightbearing and immobilization after injury have been

found to be associated with reduction in pain and improved functional benefits.[7,8] Analgesia and crutches may also be used for pain management and comfort. Consideration of referral to orthopedics or podiatry is appropriate, but initial follow-up with primary care is also reasonable depending on the practice setting.

- **Metaphyseal or Proximal Diaphyseal Fracture (ie, Jones Fracture)**
  For those with more distal fractures involving the metaphysis or proximal diaphysis, patients should be immobilized in a splint and instructed to use crutches and remain non-weight bearing until follow up with an orthopedic surgeon.[3] Patents with more distal fractures of the 5th metatarsal (ie, beyond the tuberosity) benefit from specialist referral to either an orthopedic surgeon, podiatrist, or other appropriate surgical specialist for re-evaluation and consideration for possible surgery. Early surgical fixation of such fractures results in lower rates of non-union and faster time to healing compared to conservative management.[9] In one study, surgical fixation also resulted in a faster return to sports of 2 months with early screw fixation compared to casting.[10]

Next-Level Urgent Care Pearls

- Ask about prodromal symptoms. A stress fracture manifests over time. A true proximal 5th metaphyseal fracture (ie, Jones) is from acute trauma without prodromal symptoms.[10]
- An accessory ossicle bone may be confused with a fracture of the proximal 5th metatarsal. These ossicles are typically round in contour, compared with a fracture, which is typically irregular and jagged.
- Features present with nonunion may include: repetitive trauma; recurrent symptoms; and a wide fracture line with new bone evident but remaining radiolucent.

Red Flags and Legal Pitfalls

- Evaluate for other injuries involving the other extremities, head, and/or neck.
- Examine the joint proximal and distal to the area of greatest pain.
- Palpate the proximal fibula with consideration for a Maisonneuve fracture (ie, spiral fracture of the proximal fibula) which can be seen with severe twisting ankle/foot injuries that affect the syndesmosis.
- Consider the possibility of the most time sensitive diagnoses with each patient with foot pain, notably compartment syndrome, necrotizing soft tissue infection, and septic arthritis.
- Ensure to document intact skin and a thorough neurovascular status assessment (eg, "the foot is warm with strong pulses and normal sensation throughout").

Clinical Scenario Conclusion

The hypothetical patient's XR shows an avulsion fracture of the tuberosity without involvement of the metaphysis. He's placed in a hard-soled shoe and instructed to ambulate and bear weight as tolerated with referral to follow-up with his primary care physician in about 2 weeks. Ultimately, he should be able to return to sports in about 6 weeks post-injury.

Take Home Points

- A proximal 5th metatarsal fracture of the tuberosity alone (ie, avulsion fracture) is managed with a hard-soled shoe or walking boot and early weight bearing as tolerated. It rarely requires operative intervention.
- A proximal metaphyseal fracture, commonly referred to as a "Jones fracture," requires full immobilization with a below the knee splint and non-weight bearing status with urgent surgical referral as such fractures have a high rate of non-union without fixation.
- If not confident about which fracture pattern is present and immediate specialist/radiologist confirmation is not available, it is prudent to err on the side of full immobilization, prohibition of weightbearing, and urgent specialist referral. ■

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Rehabilitation in Post-Acute Anterior Shoulder Dislocation

Take Home Point: This study suggests that routinely referring patients to a program of physical therapy is not superior to a single session of advice, supporting materials, and option to self-refer to physical therapy.

Citation: Kearney R, Ellard D, Parsons H, et. al. Acute rehabilitation following traumatic anterior shoulder dislocation (ARTISAN): pragmatic, multicentre, randomised controlled trial. *BMJ*. 2024 Jan 17:384: e076925. doi: 10.1136/bmj-2023-076925.

Relevance: Shoulder dislocations commonly present to urgent care (UC). There is, however, scarce data regarding amount or timing of rehabilitation post injury.

Study Summary: This was a pragmatic, superiority, randomized multicenter controlled trial conducted at 41 hospitals within the United Kingdom's National Health Service (NHS). All participating sites received an initial training session from a trial research physiotherapist (PT) and an initial period in which the injured arm was supported in a sling. Participants were randomized sequentially on a 1:1 basis to either a one-time advice session or to an advice session plus the additional PT. Those in the advice-only group were provided with an option to self-refer to the clinical team if recovery did not occur. The primary outcome was the Oxford shoulder instability score at 6 months.

The authors identified 482 participants who were randomly assigned to either advice only (n=240) or to advice and a program of PT (n=242). They found no significant difference in Oxford shoulder instability scores between the 2 groups at 6 months. Complication profiles were similar across the 2 groups as well and no significant differences between rotator cuff tears, compression fractures of the shoulder, shoulder re-dislocations, frozen shoulders, and nerve damage between the groups.

Editor's Comments: There was a high proportion (27%) of participants that were lost to follow-up. Post-hoc analysis which imputed data to account for this occurrence, delivered similar results. There was a low re-dislocation rate in this study, when compared to previous observational studies. This study does suggest that routine and regimented follow-up may not be necessary for patients with anterior shoulder dislocation. It is also common practice for patients with shoulder dislocations to be referred to orthopedic surgeons, and the utility of this practice was not evaluated in this study. ■

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Are There Differences in Recovery Between Sports vs Non-Sports Related Concussion?

Take Home Point: Functional limitations 6 months after injury were common after sports-related traumatic brain injury (TBI), even in the case of mild sports-related TBI.

Citation: Ntikas M, Stewart W, Ietswaart M, et. al. Contrasting Characteristics and Outcomes of Sports-Related and Non–Sports-Related Traumatic Brain Injury. *JAMA Network Open*. 2024;7(1):e2353318. doi:10.1001/jamanetworkopen.2023.53318

Relevance: Sports-related TBI is a common presentation to both emergency departments (EDs) and UCs, and long-term consequences of these injuries are still being elucidated.

Study Summary: This was a prospective, longitudinal, cohort study that enrolled patients with TBI from 18 European countries. Inclusion criteria were presentation with TBI within 24 hours of injury, a clinical indication for computed tomography (CT), and availability to consent. Follow-up for all patients was scheduled for 3 and 6 months either face-to-face, by postal questionnaire or telephone interview. The main outcome was global functional outcome at 6 months with secondary outcomes covering post-concussion symptoms, health-related quality of life, and mental health.

The authors enrolled 4,360 participants. 256 (6%) subjects had sports related TBI (SR-TBI) and 4,104 had non-sports related TBI (NSR-TBI). They found that participants with SR-TBI were significantly younger and were over twice as likely to have a university or college degree. Subjects

with sports related concussion were 2.38 times more likely to be classified as healthy before their injury (P = .001) and were also 1.59 times less likely to have a major extracranial injury (P = .02).

52% of patients with SR-TBI had an incomplete recovery at 3 months after injury, and 46% of patients with mild SR-TBI were still not fully recovered at 6 months. At 3 months after injury, the SR-TBI group had fewer impaired outcomes on scales assessing anxiety and PTSD than those with NSR-TBI.

Editor's Comments: This study setting (level 1 trauma centers) limits its generalizability. All patients had CT imaging studies implying more severe mechanisms of injury than commonly seen at many UC centers. As the majority of patients with head injuries can have clinically significant TBI (ie, requiring surgical intervention) excluded using a clinical decision rule (rather than CT scan), there is an opportunity for UC clinicians to study this less severely injured cohort. It is unclear, additionally, whether patients with SR-TBI had better recovery because of the mechanism of injury or because of better underlying health status at the time of injury. ■

Will Parents Accept Treating their Child's Pneumonia without Antibiotics?

Take Home Point: Interventions for antibiotic stewardship in children require parental and clinician buy-in. Non-treatment with antibiotics for pediatric pneumonia is not a familiar concept for parents. Parental assent to this approach requires trust in the care team and a preference for medication avoidance.

Citation: Szymczak J, Hayes A, Labellarte P, et al. Parent and Clinician Views on Not Using Antibiotics for Mild Community-Acquired Pneumonia. *Pediatrics*. 2024;153(2): e2023063782

Relevance: It is well established that the majority of childhood pneumonia cases in pre-school aged children are viral in etiology. Thus, there is growing evidence that community acquired pneumonia (CAP) in children might be managed without antibiotic therapy in many cases, however, changing clinical practice in this area remains a challenge due to the views of both parents and clinicians.

Study Summary: This was a qualitative study using semi-structured interviews conducted at Ann & Robert H. Lurie Children's Hospital in Chicago, Illinois, by an interdisciplinary investigator group with expertise in CAP. Interviews were conducted with parents or legal guardians of children who were diagnosed with CAP in the ED or outpatient setting. Interviews were also conducted with clinicians who practice in pediatric EDs, general EDs, or general pediatric outpatient settings.

The authors interviewed 18 parents/caregivers and 20 clinicians (10 pediatric ED physicians, 2 general ED physicians, and 8 general pediatricians). All parents reported that their child received antibiotics to treat their most recent episode of CAP. None of the parents in the sample were familiar with the strategy to manage CAP with no antibiotics. In the study, 11 (55%) clinicians were familiar with the recommendation that antibiotics are not routinely required for preschool-aged children with mild CAP, most of whom were ED clinicians (81%). All respondents acknowledged the importance of only using antibiotics when necessary. The cultural meaning of CAP as a serious illness, diagnostic uncertainty, fear of respiratory symptoms in young children, contextual factors surrounding each clinical encounter, and consequences of undertreating a bacterial infection contribute to a willingness to accept the risks of antibiotics (by both cohorts) even if there is a low likelihood they are needed. This underscores the influence of clinician–parent communication on antibiotic prescribing.

Editor's Comments: This study was a single centered study in an urban American quaternary care center, which limits its generalizability. The investigators were inquiring about hypothetical non-prescribing and opinions may have been different if the study examined true differences in CAP treatment. The study highlights how parents are unfamiliar with guidelines and any discussions of non-treatment with antibiotics are likely to meet resistance if this understanding is not brought to the bedside by treating clinicians. ■

Topical Lidocaine Does Little For Neck Pain

Take Home Point: There was a small but not statistically significant difference between lidocaine patches and placebo in the relief of neck pain in this study.

Citation: Cohen S, Larkin T, Weitzner A, et. al. Multicenter, Randomized, Placebo-Controlled Crossover Trial Evaluating Topical Lidocaine for Mechanical Cervical Pain *Anesthesiology*. 2023 Dec 11. doi: 10.1097/ALN.0000000000004857.

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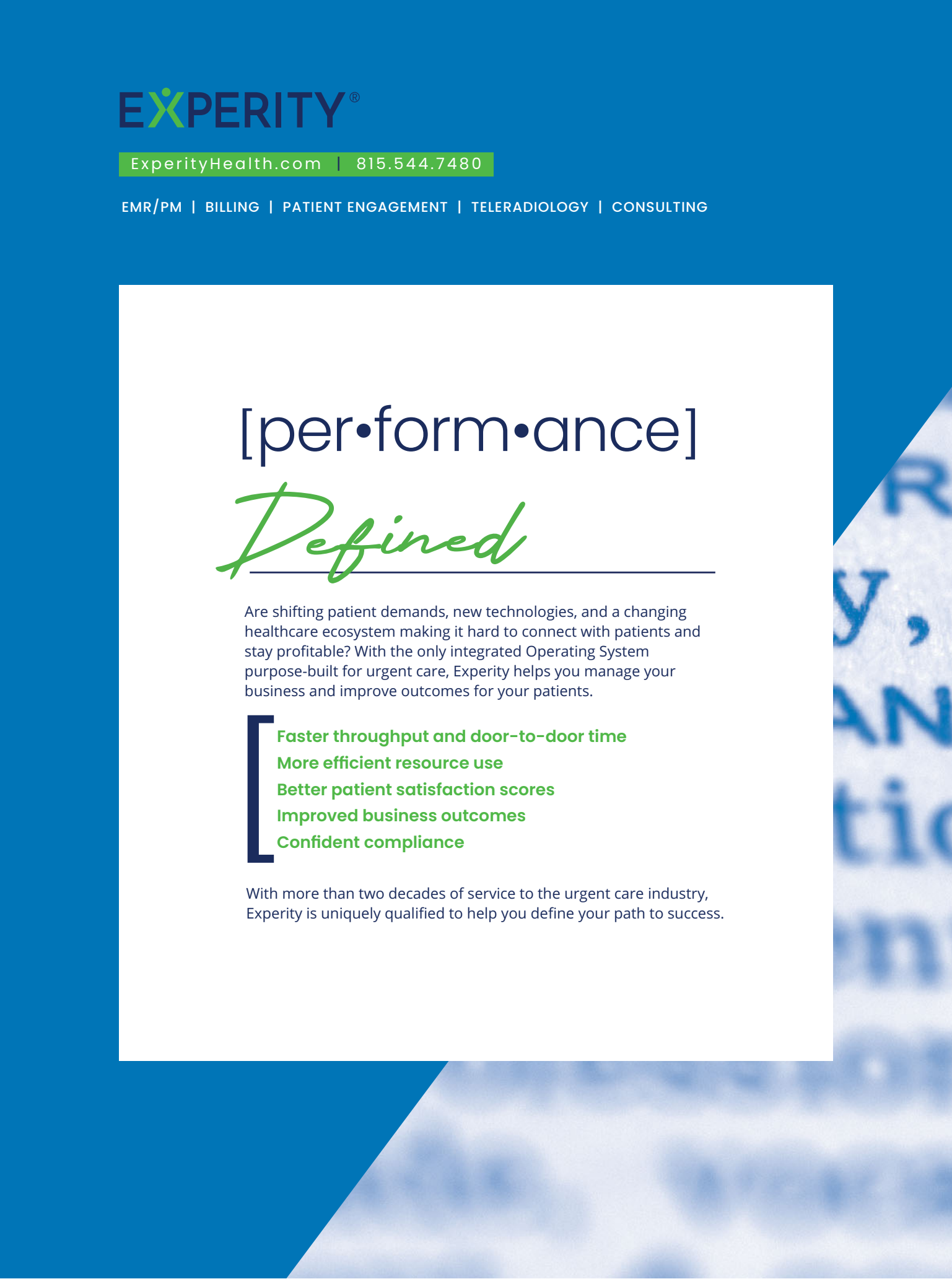

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Relevance: Increasingly, evidence is pushing practice toward non-opioid treatment of chronic neck and back pain. Yet, there are few evidence-based treatments that have proving effective for easing neck and back pain.

Study Summary: This was a randomized, double-blind, placebo-controlled crossover trial at 4 U.S. military, Veterans Administration, academic, and private practice sites. The authors studied only 76 patients who were randomized to receive either placebo followed by lidocaine patch for 4-week intervals or a reverse lidocaine-patch-then-placebo sequence. The primary outcome measure was mean reduction in average neck pain. A positive outcome was designated as a ≥2-point reduction in average neck pain coupled with a ≥5 score on the 7-point Patient Global Impression of Change scale at the 4-week endpoint of the study.

The authors found the median reduction in average neck pain score was -1.0 (interquartile range [IQR] -2.0, 0.0) for the lidocaine phase vs. -0.5 (IQR -2.0,.0) for placebo treatment (p=0.17). By comparison, 27.7% of patients experienced a positive outcome during lidocaine treatment vs. 14.9% during the placebo phase (p=0.073). Also, side effects were experienced in 27.5% of patients in the lidocaine group compared to 20.5% in the placebo group, the most common of which was pruritis (p=0.036).

Editor's Comments: This was a small study due to practical issues from recruitment perspective during COVID, and enrollment was halted prior to fully recruiting the proposed number of patients due to the expiration of the patches. This meant that the study was underpowered to detect small differences in pain relief. The authors do suggest that future studies may consider applying different lidocaine formulations with greater penetrance that may provide better clinical benefit. This was also a study of patients with chronic neck pain, which is physiologically different than acute neck pain, which is more commonly managed in UC settings. However, lidocaine patches showed good tolerance and a signal of benefit. There is little drawback to including this in a multimodal analgesia approach toward the treatment of musculoskeletal pain. ■

Long COVID: CBT Helps Chronic Fatigue Symptoms

Take Home Point: Cognitive Behavioral Therapy (CBT) helped in reducing fatigue in patients suffering from long COVID and the effects were sustained after a 6-month period.

Citation: Kuut T, Müller F, Csorba I, et. al. Efficacy of Cognitive-Behavioral Therapy Targeting Severe Fatigue Following Coronavirus Disease 2019: Results of a Randomized Controlled Trial. *Clin Infect Dis.* 2023 Sep 11;77(5):687-695. doi: 10.1093/cid/ciad257

Relevance: Long COVID is an increasingly recognized clinical entity with poorly understood pathophysiology and even fewer treatment options. CBT is a safe, well studied intervention with a variety of indications, and seems a reasonable option in conditions with large affective components, such as long COVID.

Study Summary: ReCOVer was an investigator-initiated, 2-arm, multicentre randomized controlled trial conducted in the Netherlands. Eligible patients were diagnosed with a symptomatic, laboratory confirmed SARS-CoV-2 infection with severe fatigue that began or worsened directly after the onset of symptoms of COVID-19. Participants were randomly assigned in a 1:1 ratio to either receive CBT or usual care as a control group (CG). All participants completed a baseline questionnaire and CBT was initiated 2 weeks after enrolment and continued for 17 weeks. Follow-up questionnaires were done after the CBT period and subsequently 6 months later.

The authors recruited 114 patients: 57 CBT and 57 CG patients. They found patients who reported severe fatigue 3–12 months following COVID-19 had significant improvement in fatigue after CBT compared with participants in the CG. These positive effects of CBT were sustained for 6 months after the intervention. The CBT patients were also less often severely and chronically fatigued and reported fewer concentration problems, less severe somatic symptoms, and improved physical and social functioning across both of the follow-up assessments.

Editor's Comments: Due to the nature of the study, blinding participants was not possible. There may be limited generalizability to other COVID patients as all participants in this study did not require hospitalization for their illness and was limited to the Netherlands. The reporting of fatigue was subjective in nature to individual patients with no measurable biomarker for fatigue available.

Monoclonal Antibodies Have Potential to Treat Long COVID

Take Home Point: In this small case series, participants with long COVID who received monoclonal antibody (MCA)

infusions against SARS-CoV-2 all showed rapid improvement in long COVID symptoms.

Citation: Scheppke KA, Pepe PE, Jui J, et al. Remission of severe forms of long COVID following monoclonal antibody (MCA) infusions: A report of signal index cases and call for targeted research. *Am J Emerg Med*. 2024;75:122-127. doi:10.1016/j.ajem.2023.09.051

Relevance: Long COVID has few proven treatment options and can be highly debilitating.

Study Summary: This was a case report of 3 index cases of middle-aged patients who developed long COVID symptoms. They were all treated with casirivimab/imdevimab cocktail MCA infusions. In each case, MCA infusions were intended to help prevent worsening of the chronic conditions following a new COVID-19 exposure. In all 3 cases, long COVID symptoms had been severely debilitating and unrelenting. The authors documented the reported symptoms of each patient in narrative style.

Each person had the same complete (and sustained) rapid remission within 5–7 days of MCA administration regardless of age, sex, medical history, or duration of long COVID. These improvements in fatigue and cognitive issues remained for at least one year of follow-up. Among other cases being followed by the investigators, MCA infusions did not improve long COVID patients with isolated (but persistent) anosmia/dysgeusia.

"This certainly shouldn't prompt a change in standard of care, but for recalcitrant cases of long COVID, MCA could be considered."

Editor's Comments: This was a small case series and there was no control group. As such, it is unclear if there may have been a placebo effect. Additionally, symptom improvement was entirely subjective and there were no objective scoring systems used to grade the patients' change in symptoms. This certainly shouldn't prompt a change in standard of care, but for recalcitrant cases of long COVID, MCA could be considered. This study certainly warrants a follow-up randomized trial to evaluate for the magnitude of actual treatment effect. ■

Private Equity Ownership in Urgent Care By Number of Centers, 2024

Alan A. Ayers, MBA, MAcc

Citation: Ayers A. Private Equity Ownership in Urgent Care By Number of Centers, 2024. *J Urgent Care Med*. 2024; 18(7):33-34

Although private equity started nibbling on urgent care as far back as 2007, its full investment push kicked off with the 2010 acquisitions and scaling of NextCare, MedExpress, and FastMed. Since that time, some regional platforms like Physicians Immediate Care, MD Now, and PhysicianOne have completed the entire private equity investment lifecycle of acquisition, scaling, and final sale. Today, more than 2,300 of the nation's urgent care centers, or approximately 17% of the total, are backed by private equity investment.

Over the past 15 years, the private equity investment thesis has evolved from an arbitrage on price-earnings multiples in the consolidation of independent operators, to realizing scale economies through de novo rooftop growth, to cash flow from COVID-19 operations, to the current trend of growth in revenue and EBITDA through expansion into rural health geographies, Medicaid populations, health system partnerships, and integration of new services. Such new services include specialists, physical therapy, behavioral health, and primary care. ■

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Private Equity Investors	Total Center Count	Operating Platform
Lorient Capital	402	American Family Care, Midwest Express Clinic
TPG	266	GoHealth Urgent Care
Revelstoke	255	Fast Pace Health
Leonard Green & Partners, Ares Private Equity	198	WellNow Urgent Care
Enhanced Equity Partners	170	NextCare Urgent Care
FFL Partners	149	WellStreet Urgent Care, Perlman Clinic
Shore Capital Partners	95	Community Care Partners
Freeman Spogli	87	CRH Healthcare
Petra Capital Partners, Crestline Investors	87	Urgent Team
Scopia, Jefferson River Capital	79	PM Pediatrics
ICV Partners	55	Urgent Care Group
Orangewood Partners, Quilvest	55	Exer Urgent Care
Latticework Capital Management	52	Xpress Wellness
Trinity Hunt Partners	48	Main Street Family Urgent Care
Onex Falcon, Crestline Capital	47	CareSpot Urgent Care
The Catalyst Group	43	NextLevel Urgent Care
Bain Capital Double Impact	42	ConvenientMD
Summit Partners	36	AllCare Family Medicine and Urgent Care
Iron Path Partners	33	Emergence Health Holdings
Altamont Capital Partners	29	Intuitive Health
Sverica International	21	Med First Urgent Care & Family Practice
Great Point Capital	20	Little Spurs Pediatric Urgent Care
Kain Capital LLC	18	MY DR NOW
NewSpring Capital	15	Vybe Urgent Care
Traverse Pointe Partners	10	Greater Midwest Urgent Cares
Webster Equity Partners	10	MyTown Health Partners
Cequel III	8	Springfield Urgent Care
McKinney Capital	8	Urgent Care for Children
Seven Hills Capital	7	ExperCare Urgent Care
Walnut Court Capital	7	LevelUp MD Urgent Care
City Ventures	4	Midlands Family Urgent Care
Kinderhook Industries	2	Rural Healthcare Group
Praesidian Capital	1	Care+Pediatrics Urgent Care
Total	**2,359**	

Compiled by Alan Ayers, President of Experity Consulting and Senior Editor of The Journal of Urgent Care Medicine, after consultation with investment bankers, private equity partners, and a review of press releases, news articles, and transaction reports. Center counts are courtesy of National Urgent Care Realty.

CME: This peer-reviewed article is offered for AMA PRA Category 1 Credit.™
See CME post-test questions on page 11.

How Useful Is Ultrasound in Acute Female Pelvic Pain?

Urgent Message: For time-sensitive diagnoses related to acute pelvic pain, ultrasound is generally the recommended initial diagnostic imaging study. While not universally available in urgent care, it can often be completed more rapidly than computed tomography or magnetic resonance imaging.

Andrew Alaya MD MSc

Citation: Alaya A. How Useful Is Ultrasound In Acute Female Pelvic Pain? *J Urgent Care Med.* 2024;18(7):35-40

Introduction

Acute pain in the pelvic or lower abdominal region among women of reproductive age who are not pregnant is a common reason for seeking care at urgent care (UC) centers and emergency departments (ED). In 2018, there were over 500,000 obstetrics/ gynecology (OB/GYN) ED visits by adolescents in the United States.[1] For the purposes of this review, the term "acute pelvic pain" refers to a sudden onset of severe pain of the lower abdomen.[2]

When a woman of reproductive age presents to a UC center for sudden pelvic or lower abdominal pain, it is crucial to rule out conditions that might be associated with significant morbidity, loss of fertility, and/or potential mortality without rapid medical or surgical intervention.[1] Such interventions will necessitate rapid OB/GYN consultation, or if unavailable, referral to an appropriate ED. Given the diversity of etiologies for acute pelvic pain—which may be related to pathology of the gastrointestinal, gynecological, urological, or vascular system—ultrasound (US) is often a highly effective and economical initial imaging modality for risk stratifying such presentations.

Gynecological emergencies represent a significant proportion of cases involving acute pelvic pain.[3] The underlying pathological conditions leading to the onset

of pain are rather diverse,[4] and they can be categorized based on age group, pregnancy status, and organ of origin.[5]

For females of reproductive age, it is crucial to exclude pregnancy with human chorionic gonadotropin (βhCG) testing. A qualitative urine hCG is highly accurate at excluding pregnancy and rarely results in false negative results.[6] Correctly diagnosing the cause of pelvic pain requires a comprehensive assessment, taking into account the patient's past medical history, presenting history, physical exam, and investigative findings. Specific historical features that are important to assess include:

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Table 1. Differential Diagnosis Of Lower Abdominal Pain According To Gastrointestinal, Urological, And Gynecological Systems	
Gastrointestinal sources of both right and left lower quadrant and pelvic pain	Appendicitis, inflammatory bowel disease, inguinal hernia (incarceration and strangulation), diverticulitis, constipation, functional abdominal disorders (eg, irritable bowel syndrome)
Urological sources of both right and left lower quadrant and pelvic pain	Pyelonephritis, cystitis, urinary retention, ureteral calculus
Gynecological sources of both right and left lower quadrant and pelvic pain	Ectopic pregnancy, ruptured or hemorrhagic ovarian cyst, adnexal torsion, pelvic inflammatory disease, tubo-ovarian abscess, dysmenorrhea, endometriosis

- The onset, location, quality, radiation, duration, aggravating and alleviating factors, and any temporal changes of the pain over time
- Associated symptoms, such as vomiting, diarrhea, fever, flank pain, dysuria, hematuria, frequency, urgency, vaginal bleeding, and vaginal discharge
- Relevant related medical history, such as last menstrual period, regularity and duration of menses, age of menarche, sexual history, history of sexually transmitted infections, and a complete obstetric history

The physical examination should concentrate on accurate and complete vital signs, abdominal exam, and genitourinary exam, including a bimanual and speculum exam.

Depending on the history and physical exam, the etiology of the pain can be categorized as likely gastrointestinal, urological, or gynecological in origin. US then can be used subsequently to further refine the differential diagnosis presented in **Table 1**.

Laboratory investigations that may be considered include:

- Complete blood count that may reveal anemia or thrombocytopenia to suggest degree and cause of hemorrhage or leukocytosis, which is non-specific but may suggest an inflammatory condition
- Urinalysis that may reveal hematuria and/or pyuria
- Urine pregnancy test
- Vaginal wet mount or pathogen assay to assess for trichomonas, bacterial vaginosis, or *Candida*.
- Endocervical or vaginal polymerase chain reaction swabs for chlamydia (CT) and gonorrhea (GC)

Acute pelvic pain can represent a wide spectrum of conditions, ranging from a benign and self-limited disease to surgical emergencies. The remainder of this article focuses on acute gynecological sources of pelvic pain and how US offers excellent additional diagnostic information in differentiating many of the gynecological issues that can cause acute pelvic pain including:

- Adnexal torsion
- Ectopic pregnancy
- Pelvic inflammatory disease
- Ovarian cysts
- Adhesions
- Endometriosis

Adnexal Torsion

Adnexal torsion, a condition where the ovary and fallopian tube twists around its vascular axis, can result in ovarian ischemia and necrosis. It occurs most commonly in women of reproductive age (70%), though it can occur in any age from prepuberty to postmenopause.[7] Torsion can be intermittent and resolve spontaneously in certain cases, however, identification necessitates prompt diagnosis and emergency surgical intervention to preserve the ovary and prevent infertility.

Adnexal torsion is ranked as the 5th most common gynecologic emergency.[8] Diagnosing ovarian torsion can be challenging due to the diverse underlying causes of lower abdominal pain in females. Clinical manifestations, such as acute pelvic pain that can be constant or intermittent due to twisting and untwisting of the adnexa, occurs in 94-100% of cases. Due to the intense pain, vomiting is common and occurs in 70% of cases. As the clinical presentation is variable and overlaps with many other conditions, misdiagnosis is common, and delays in diagnosis increase the risk of unsalvageable ovary.[9]

US is useful for differentiating ovarian torsion from other pelvic pain conditions. βhCG should be performed in women of childbearing age to exclude ectopic pregnancy as a possible cause of sudden pelvic pain. A ruptured ovarian cyst is a common condition that may mimic ovarian torsion as it also causes the sudden onset of sharp pain. Cyst rupture commonly occurs during physical activity or sexual intercourse, but this history

is not universal for this diagnosis. On the other hand, a gradual onset of pelvic pain (especially if accompanied by fever) likely indicates an alternate diagnosis, such as tubo-ovarian abscess (TOA), pelvic inflammatory disease (PID), appendicitis, or diverticulitis.[10]

There are no laboratory test that can confirm or exclude ovarian torsion. However, leukocytosis from the acute stress reaction is not an uncommon finding.[10]

One of the main risk factors for ovarian torsion is a previous history of adnexal torsion. Between 11-19% of patients with torsion have had a previous adnexal torsion event.[10] Another important risk factor is the presence of ovarian cysts or other causes of ovarian enlargement, as torsion occurs much more commonly with adnexal enlargement. The right ovary is more commonly affected than the left, likely due to more potential space owing to the location of the sigmoid colon.[10] While ovarian masses increase the risk of torsion, particularly those larger than 5cm, the risk of torsion seems to be mitigated by endometriosis and malignant lesions possibly due to the presence of adhesions from chronic inflammation.[11]

US with Doppler is generally the preferred initial imaging modality for diagnosing ovarian torsion. Accuracy is highest if both transabdominal and transvaginal views are obtained. While US is recommended as the initial imaging study for suspected torsion, it is a more specific than sensitive modality. US findings of torsion, when present, are highly valuable and rule in the diagnosis with up to 100% positive predictive value.[12] It is important to note that US has a sensitivity of only 84%, which is influenced by various factors, including the operator's skills and the patient's anatomy.[13] Therefore, in cases of high clinical suspicion, it is important to not rely on a negative or non-diagnostic US to exclude torsion.

US is particularly sensitive in detecting ovarian edema. In some cases, free fluid may be visible, or the characteristic "whirlpool sign," which is highly specific, can be demonstrated due to the twisting of the vascular pedicle in cross-section.[13] Computed tomography (CT) is an alternative imaging modality and may be slightly more sensitive than US,[14] but US remains the preferred choice due to its widespread accessibility, lack of ionizing radiation, and cost-effectiveness worldwide.[8]

According to Spinelli et al., when assessing females suspected of adnexal torsion, it is essential to recognize that no clinical or imaging criteria alone are adequate for excluding the diagnosis of adnexal torsion. In cases where there is a clinical suspicion of adnexal torsion, it is recommended that patients receive emergent gynecological consultation for diagnostic laparoscopy.[15]

Although diagnostic laparoscopy is generally recommended when there is strong clinical suspicion (even if US findings do not confirm ovarian torsion), only 44% of diagnostic surgical approaches actually confirm the presence of ovarian torsion. One study found that the time between the initial physical examination and surgery can vary widely, ranging from 0 to 90 days, with a median time of 101 hours.[9]

"In cases where there is a clinical suspicion of adnexal torsion, it is recommended that patients receive emergent gynecological consultation for diagnostic laparoscopy."

The definitive diagnosis of ovarian torsion is achieved through direct visualization of the rotated ovary during surgery. In patients of reproductive age, this allows for the untwisting of the ovary while preserving its function. Even though fertility is not a concern in postmenopausal patients with torsion, unilateral salpingo-oophorectomy is often justified due to the higher risk of malignancy and to prevent recurrence.[16]

Ectopic Pregnancy

Ectopic pregnancy (EP), or extrauterine pregnancy, refers to the implantation of a blastocyst outside the uterine cavity. Approximately 95% of EPs occur in the fallopian tube.[17] Other less frequent implantation sites include the ovaries (3.2%) and the abdominal cavity (1.3%).[17] EP represents a major cause of morbidity and death in women worldwide due to the associated risk of tubal rupture and intra-abdominal hemorrhage. It can also adversely affect future fertility.[17] As a result, EP requires rapid diagnosis and, in the cases of rupture, surgical intervention.[17] In patients with a positive βhCG test, a transvaginal US is recommended for patients with either pelvic discomfort or vaginal bleeding,[17] though patients do not always present with both.

EP is a common reason for women with pelvic pain to seek emergency care, and it comprises about 2% of all pregnancies. The risk can be increased in patients with sexually transmitted infection, such as CT or GC, and also by congenital abnormalities, endometriosis, or history of previous surgery.[11] The incidence can be as high as 4% among women using assisted reproductive technology (ART), and in total, EP is responsible for about 10% of deaths during the first trimester of pregnancy.[18] Generally, EP can be considered ruled out with a negative urine βhCG. In patients with negative βhCG with significant pelvic pain who also undergo transvaginal US and have no evidence of intra- or extrauterine gravidities present, EP can generally be safely excluded, despite the relatively rare possibility of a false negative urine βhCG test.[19] More importantly, US can rule out ectopic when an intrauterine pregnancy is identified, unless the patient is at high risk for heterotopic pregnancy (ie, receiving fertility treatments). Heterotopic pregnancy—the rare occurrence of an EP co-occurring with an intrauterine pregnancy (IUP)—is an entity that should be considered in women at elevated risk (ie, those undergoing ART) and with presentation concerning for EP.

Outside of a hospital setting, quantitative serum βhCG is not generally immediately available, and qualitative urine tests are usually performed. Nevertheless, the latter is often used in a hospital setting as well. A standard urine test can detect hCG as low as 20 IU/L.[6] A negative urine test is generally considered to rule out pregnancy. Unfortunately, this is not always the case as patients with very early or abnormal pregnancies can have serum hCG concentrations under 20 IU/L.[6] A 2021 retrospective ED study found that urine pregnancy tests had a 1.6% false negative rate, and 7% of early missed pregnancies were ectopic.[20]

US is the first modality of choice when considering the possibility of EP. Abdominal US is useful, but transvaginal US performs better in confirming an intra- or extrauterine gestation with a sensitivity of 93% and specificity of 97%.[21] Together with US, βhCG, is a valuable tool for assessing pregnancy. A combination of US and βhCG has 95% sensitivity and specificity for EP.[18] A practical approach for many UC settings is to use US to "rule in" intrauterine pregnancy. If a urine βhCG is positive, but no IUP is identified on US, immediate referral to an ED is appropriate for further assessment for a possible EP.

Pelvic Inflammatory Disease

Pelvic inflammatory disease is caused by infection of the upper genital tract, primarily due to GC or CT, though other aerobic and anaerobic organisms may also be involved.[22] Common symptoms of PID include fever and purulent vaginal discharge. Diagnosis can be challenging, especially in resource limited settings such as urgent care centers. According to the Centers for Disease Control and Prevention, the diagnosis of PID is based on imprecise clinical findings.[23] Early treatment with antibiotics effective against these causative agents, as well as anaerobic organisms, is crucial to minimize the risk of long-term complications, such as chronic pelvic pain, infertility, intra-abdominal infection, and an increased risk of ectopic pregnancy. PID can be acute, chronic, or subclinical and is often misdiagnosed at the index visit.[24]

Diagnosis is primarily based on clinical suspicion, and therefore, it's essential to consider PID in sexually active women who experience unexplained lower abdominal or pelvic pain and who exhibit tenderness and/or purulent cervical discharge during pelvic examination.[25] US has a limited role in the diagnosis of PID as it is predominantly a clinical diagnosis. Tuboovarian abscess can occasionally be identified on transvaginal ultrasound, however, the sensitivity of US for TOA is only ~50%. Therefore, if TOA is suspected, cross-sectional imaging with CT or magnetic resonance imaging (MRI) is preferred.[26] Since these cases tend to be more ill-appearing and advanced imaging modalities are rarely available in UC, ED referral for such cases is appropriate.

Mild to moderate PID cases can be treated on an outpatient basis with a single intramuscular injection of ceftriaxone, followed by a 14-day course of oral doxycycline. Additionally, metronidazole is recommended for 14 days if bacterial vaginosis, trichomoniasis, or recent uterine instrumentation has occurred. Hospitalization and parenteral antibiotics are advised for pregnant patients, those with severe or febrile illness, cases where outpatient treatment fails, individuals with suspected or confirmed TOA, or when surgical emergencies cannot be excluded. These treatment recommendations are the same for patients with intrauterine devices or those with HIV.[25] While there has been a general decline in PID rates, the increase in cases of GC and CT, along with increasing resistance rates GC are concerning trends.[25]

Ovarian Cysts

During women's reproductive years, various types of benign adnexal masses, including physiologic cysts, can present with acute pelvic discomfort.[27] Functional or physiologic cysts such as follicular cysts, corpus lu-

teum cysts, and theca lutein cysts are common examples. Large follicular cysts may cause pelvic discomfort and dyspareunia, but most resolve spontaneously without complication.[28]

After regular ovulation, blood can accumulate in the central follicular cavity, leading to the development of a corpus luteum cyst, which can cause pain or discomfort if it persists.[29] Theca lutein cysts, associated with elevated hCG levels, may arise due to conditions like molar pregnancy, choriocarcinoma, or clomiphene therapy, but they typically resolve with appropriate management of the underlying condition (or clomiphene is discontinued, in such cases).[30]

In premenopausal females, ovarian cysts are frequently found, and they typically do not cause intense pain unless there is hemorrhage or rupture. Pelvic ultrasonography can easily identify serous follicular cysts, which have a thin-walled appearance and a diameter of >3 cm. Corpus luteum cysts exhibit a thick irregular wall on US.[31]

During the menstrual cycle's luteal phase, increased ovarian vascularity can raise the risk of hemorrhage or rupture.[32] Hemorrhagic cysts may show diverse ultrasonographic appearances depending on the stage of blood product evolution. They typically exhibit lacelike internal echoes with peripheral vascularization on color Doppler US, lack internal signals, and may contain fluid-fluid levels.[23]

Some females may experience varying levels of pelvic pain during ovulation, known as "mittelschmerz."[33] This type of pain is considered normal and typically resolves spontaneously within a few hours. It manifests as unilateral discomfort or pain in the lower abdomen and may be accompanied by a small amount of free pelvic fluid. Medical attention is generally not required for this condition. In cases where ovarian cysts are suspected to have ruptured (ie, severe, abrupt onset pelvic pain), free fluid in the pelvis may be identified without evidence of cysts. These cases generally are self-limited, but rarely can be associated with large hemoperitoneum and hemorrhagic shock requiring transfusion and emergent operative intervention.[34]

Adhesions

Asherman's syndrome, also known as intrauterine adhesion (IUA), presents a diverse array of subacute-chronic signs and symptoms, including discomfort and menstrual irregularities, resulting from the presence of intrauterine adhesions. Even in cases where symptoms arise without pregnancy-related adhesions, IUA should be considered.[35] For gynecologists, it is important to differentiate between iatrogenic IUA as a consequence of procedures such as endometrial ablation and primary cases.[36]

"In premenopausal females, ovarian cysts are frequently found, and they typically do not cause intense pain unless there is hemorrhage or rupture."

IUA is a complex condition with profound effects on reproductive function, leading to menstrual disturbances (amenorrhea), infertility, and recurrent pregnancy loss. Therefore, patients with more indolent pelvic pain can generally await gynecologic specialist decisions about imaging to confirm this diagnosis. US may play a role and show suggestive findings but has a less established role in the diagnosis of IUA.[37] Advanced intrauterine surgeries using modern technology further increases the risk of IUA.[38]

Endometriosis

Endometriosis is a frequently encountered condition characterized by the occurrence of functional endometrial glands and stroma beyond the confines of the uterus.[39] This chronic condition often follows a cyclical pattern that corresponds to the secretory phase of the menstrual cycle. Both US and MRI techniques serve as valuable diagnostic instruments for visualizing ovarian endometriomas. US can identify distinct unilocular cystic formations with a "ground glass" appearance and an absence of vascular patterns, while MRI has a better sensitivity in revealing the deep-seated pelvic variant.[32]

This condition is estrogen-dependent and is predominantly identified in women during their reproductive years. It stands as one of the most prevalent non-cancerous gynecological disorders. Although the precise prevalence of endometriosis remains unknown, estimates span from 2 to 10% within the overall female population and potentially up to 50% in women dealing with subfertility or persistent pelvic discomfort.[40]

The clinical manifestation of this condition can be highly variable. Diagnosis is confirmed through findings from physical examinations and imaging, and ultimately can be confirmed via histological analysis of either biopsied tissue from visibly affected areas or samples collected during laparoscopy.[41]

Given the chronic, recurrent nature of this condition, many patients will not seek care in UC for this pelvic pain, but presence of endometriosis does not exclude the possibility of other, acute gynecologic pathology. Therefore, if there is acute pain outside of the patient's typical pattern of pelvic pain, US can serve as a useful initial imaging modality to complement a history and physical to determine if other more emergent diagnoses may also be present.

Conclusion

Pelvic pain comes in various forms—acute, chronic, or recurring—and it can also commonly be functional in nature. As with any undifferentiated complaint, UC evaluation begins with an appropriate history and exam. For time sensitive diagnoses, including ectopic pregnancy, ovarian torsion, and tubo-ovarian abscess, immediate US is generally the recommended initial diagnostic imaging study. While not universally available in UC, it can often be completed more rapidly than CT or MRI and has the advantage of usually less expense and no ionizing radiation exposure, while providing valuable data to integrate into the overall diagnostic assessment of pelvic pain in women.

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Original Research

NSAIDs in Urgent Care and Emergency Departments: A Narrative Review

Urgent Message: This narrative review of non-steroidal anti-inflammatory drugs (NSAIDs) characterizes the specific evidence-based indications, previous studies on dosing and route, and side effects of these medications. It supports NSAIDs as an important class of medications in the management of acute pain in urgent care and emergency settings.

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Key Words: Non-steroidal anti-inflammatory drugs, pain, extremity injury, headache, renal colic

Abstract

Background/Objective: Non-steroidal anti-inflammatory drugs (NSAIDs) are common medications that are used in a variety of healthcare settings. We aim to analyze the utility of NSAIDs in treating different painful conditions when compared to other alternative medications, their effectiveness between different dosing and routes, as well as the potential side effects of NSAIDs. The goal of this review is to guide urgent care providers in using these medications more effectively.

Methods: We searched the MEDLINE database and developed a search term strategy using medical subject headings (MeSH) to capture NSAID-related studies in urgent care or emergency settings. Based on the initial full-text review, chief complaints were simplified into the following categories: trauma/extremity injury; headaches; nontraumatic back pain; abdominal pain (excluding renal colic); renal colic; and pediatric pain.

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Results: Sixty-seven studies were included in our narrative review. For traumatic pain, when compared to opioids, NSAIDs are as effective as opioids with less dependence. In comparison with acetaminophen, most studies showed comparable results in pain reduction, and only 1 observational study showed a lower analgesic effect with NSAIDs. In patients with headaches, NSAIDs and antiemetics combined lead to a higher discharge rate and more significant pain relief; however, in a randomized controlled trial (RCT) in children, antiemetics alone have similar results as combined therapy. For renal colic, 2 RCT trials revealed that NSAIDs have a higher analgesic effect than intravenous (IV) opioids or acetaminophen. Moreover, intramuscular (IM) diclofenac was found to be superior to its oral form at 5 minutes post-administration, and there are 5 RCTs showing no more pain relief benefits of ketorolac after doses higher than 10mg. NSAIDs are also associated with a higher risk of failure of colorectal anastomosis, non-variceal gastrointestinal (GI) hemorrhage, and gastroduodenal ulcers.

Conclusion: NSAIDs are safe, effective analgesic options that can be considered alongside acetaminophen for most acute painful conditions. Compared to opioids, NSAIDs have fewer side effects with comparable pain reduction. Single-use and short-term NSAID use is generally safe for patients ranging from geriatric to children over 6 months old; however, side effects of bleeding, surgical anastomotic failure, and anaphylaxis should be considered.

Introduction

Nonsteroidal anti-inflammatory drugs (NSAIDs) are commonly administered and prescribed pain medications in urgent and emergent settings for numerous conditions and populations.[1] They can be safe, efficacious, and opioid-sparing medications in children and adults, and ibuprofen is the single most prescribed medication for pain and inflammation in both groups.[2] Typical indications for these medications include migraines, renal colic pain, traumatic and non-traumatic musculoskeletal pain, and acute low back pain.[3] In addition to oral medications like ibuprofen, NSAIDs have proven efficacy in intravenous (IV), intramuscular (IM), intranasal, and topical administration. Despite their utility, NSAIDs can lead to adverse drug reactions and have been implicated in increased bleeding, cardiovascular events, and renal injury.[5,6] However, these risks need to be balanced with the risks of alternative medications. For example, opioids can cause various central nervous system (CNS) side effects ranging from euphoria to dizziness to cognitive issues, as well as dependence, and opioid prescribing is a contributor to the ongoing opioid epidemic in the United States.[7]

Given these medications' utility and potential side effects, urgent care (UC) clinicians must understand the benefits, risks, and potential misconceptions about NSAID administration and prescription. These medications are a mainstay in many healthcare settings for mild to moderate pain and a valuable tool for any UC specialist to alleviate patient discomfort during evaluation.[1,7] Despite this, there is a paucity of reviews that are explicitly focused on ambulatory settings, and no studies specifically address the unique setting of UC centers. We aim to characterize the specific evidence-based indications, analyze previous studies on NSAID dosing and route, and compare side effects between these medications and other classes.

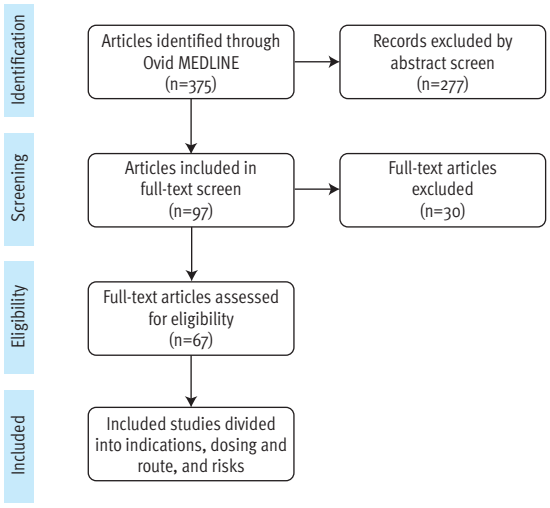
We completed a narrative review of MEDLINE using specific search criteria to capture studies of NSAID use in urgent care or emergency departments, indications, and side effects. Overall, we hypothesized numerous uses for these medications. At the same time, there may be misconceptions about the safety and efficacy of NSAIDs compared to acetaminophen, opioids, and other pain medications. This narrative review will help guide urgent care providers in using NSAIDs regularly and effectively to treat their patients' pain.

Methods

We queried the MEDLINE database on January 24, 2023, to capture studies in this database within the past 10 years. We developed a search strategy using medical subject headings (MeSH) terms to capture urgent care and emergency department studies of NSAID use by including related terms to these care settings and each common NSAID. Duplicate studies were removed, and titles and abstracts were screened using the Rayyan screening application according to specific inclusion and exclusion criteria.[8] Types of studies included were randomized controlled trials (RCTs), cohort studies, and systematic reviews with included meta-analyses (SRMA). We considered all studies that compared NSAIDs to other pain medications, assessed the safety of these medications, and compared doses and routes of NSAIDs. Two investigators screened all full-text articles.

Investigators extracted individual study details, including design, setting, primary and secondary outcomes, and the painful complaint. Based on the initial full-text review, the following categories of chief complaint

Figure 1. Flow Diagram Of Search Strategy For Urgent And Emergent NSAID Studies Using PRISMA Protocol



PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

were created to simplify interpretation: trauma/extremity injury; headaches; nontraumatic back pain; abdominal pain (excluding renal colic); and renal colic; and pediatric pain. Data was extracted by one investigator (AH) and verified by a second investigator (CB).

Results

The literature search and abstract screening identified 375 potential studies, and 97 articles were included in full-text screening (**Figure 1**). Of these, 67 studies were eligible for inclusion in our narrative review. These studies compared the efficacy and safety of NSAIDs and other pain medications, explored specific indications for NSAIDs, and considered side effects and contra-indications of NSAIDs.

I. Indications and comparative studies of NSAIDs with other medications

a. Traumatic injury

NSAIDs perform very similarly to opioids and acetaminophen for traumatic pain with fewer side effects than opioids.

One RCT of 411 ED patients with acute extremity pain averaging 8.7 on numeric rating score (NRS) showed no statistical difference in pain reduction at 2 hours between ibuprofen vs 3 different opioid medications combined with acetaminophen (P = 0.53), while a SRMA of 6,128 ED patients with musculoskeletal (MSK) pain also showed no difference in pain reduction with opioids compared to NSAIDs.[9,10] Another large RCT (n = 948) of ED patients presenting after motor vehicle collision showed no difference between opioids and NSAIDs in moderate to severe MSK pain at 6 weeks (absolute risk reduction [ARR] = 7.2%; 95% confidence interval [CI]: -5.2, 19.5%), while patients prescribed opioids were more likely to have continued to use of these medications (ARR = 17.5%; 95% CI: 5.8, 29.3%).[11] Moreover, in 1 cross-sectional study of 104 ED patients aged 65 and older who were undergoing initiation of analgesic treatment for acute MSK pain, those taking opioids were more likely to have had moderate or severe side effects than those taking only non-opioids (62%, 95% CI = 48% to 74% vs 4%, 95% CI = 1% to 20%) and were also more likely to have discontinued treatment due to side effects like fatigue, nausea and constipation (16%, 95% CI = 8% to 29% vs. 0%, 95% CI = 0% to 13%).[12] An observational study comparing ibuprofen and oxycodone in 329 children with isolated fractures found no difference in the mean reduction in pain score (Faces Pain Score-Revised score) on days 1, 2, and 3.[13] Lastly, a network meta-analysis of 18 RCTs consisting of 2,656 patients with traumatic MSK pain found that, while no medication class showed a superior analgesic effect than opioids at the 60-minute time point, NSAIDs were the medication class with the highest score for overall effectiveness.[14]

Conversely, an observational study of 200 patients showed a higher analgesic effect of paracetamol/codeine than ketorolac for fractures and MSK pain (p = 0.044) and a significantly higher effect 2 hours after administration (p = 0.029).[15] Another RCT comparing 800 mg ibuprofen to 1g acetaminophen for acute MSK pain found no difference in visual analog scores (VAS) at 1 hour between these treatments (P = 0.59).[16] In a similar RCT study (n = 60) comparing oral diclofenac potassium (50 mg) and intravenous acetaminophen (1 g in 500 ml normal saline over 20 minutes), VAS scores between the 2 were assessed and found to have no change (p = 0.11).[17] Two more RCT studies (n = 200) each compared 50 mg of IV dexketoprofen to 1 g of IV acetaminophen/paracetamol and found no difference in the VAS score reduction (p = 0.613) for traumatic MSK pain but did show a difference/increased efficacy for dexketoprofen for non-traumatic MSK pain (p = 0.001).[18,19]

Other modes of administration for NSAID use were also assessed in 2 studies using topical ketoprofen vs placebo for acute ankle sprains.[20,21] In both double-blinded RCTs for adults (n = 200) and children (n = 60), VAS pain score reductions were noted to be greater in

the topical ketoprofen group vs placebo (16 [9-22], 21 [15-27], 20 [13-28] and 35 [29-41]).[20,21] However, a double-blinded study of topical piroxicam vs capsaicin for traumatic pain in the ED showed that the clinical effect of capsaicin was significantly higher ($p < 0.01$).[22]

Sublingual use of ketorolac (0.5 mg/kg) vs tramadol (2 mg/kg) was also evaluated in an RCT (n = 131) of pediatric patients with moderate to severe post-traumatic bone pain and found no difference between the two in primary pain reduction at 6 different time intervals up to 120 minutes post-administration.[23] Lastly, in an observation study with 824 patients using intranasal NSAIDs vs opioids vs a combination of both, intranasal NSAIDs were found to have a significant change in the maximum pain scores day to day ($p < 0.05$) with decreased rates of adverse events ($p < 0.001$) despite nasal irritation being more common (odds ratio [OR] =3.51, $P < 0.0001$) and higher satisfaction scores (3.93 vs 2.8).[24]

b. Headaches

Primary headaches represent a heterogeneous group of disorders. NSAIDs in combination with antiemetics are commonly used to treat migraine headaches. An observational study of 847 cases indicated NSAIDs are the most frequently used class of medications for headaches (81%) compared to antiemetics (43.1%).[25] Two studies indicated that combination therapy of NSAIDs with antiemetics led to higher discharge rates than independent administration of each ($p < 0.05$) and more significant pain relief at 30 minutes ($p = 0.025$).[26,27] However, one RCT of children presenting with headache (n = 53) indicated no difference between metoclopramide alone vs metoclopramide with ketorolac.[28] One additional study found dexketoprofen superior to placebo, and a study of 2 tertiary EDs suggested both dopamine antagonists and NSAIDs decreased the need for rescue medications compared to other medications.[29,30]

An RCT evaluating IV sodium valproate vs IV ibuprofen showed increased pain relief in the sodium valproate group ($p < 0.001$). A SRMA of 32 trials (n = 321) showed no difference between ketorolac vs meperidine and a phenothiazine agent, but improved pain reduction compared to intranasal sumatriptan.[31] Two studies showed no difference in pain outcomes between metoclopramide and ketorolac but indicated more rescue medications were needed for ketorolac.[32]

c. Atraumatic back pain

Overall, the studies reviewed suggest that NSAIDs perform similarly to opioids for back pain, but with fewer side effects. In an RCT (n = 137) studying the efficacy and safety profile of IV single-dose paracetamol vs dexketoprofen vs morphine in the treatment of lower back pain, there was no significant difference found between all 3 interventions in pain reduction via VAS score.[33] There was, however, a higher rate in adverse events in the morphine group.

d. Abdominal pain

Abdominal pain can be caused by a large variety of benign and serious conditions. For non-dyspepsia type abdominal pain, NSAIDs have shown efficacy in several specific and non-specific types of abdominal pain. One systematic review of 12 RCTs (n = 669) found no difference between opioids and NSAIDs in efficacious acute pancreatitis treatment and no significant difference in adverse events.[34] Another prospective study of patients with abdominal pain related to pancreatitis showed no difference between acetaminophen, dexketoprofen, and tramadol in pain relief.[35] A retrospective cohort study (n = 11,688) found that ketorolac decreased the need for opioids for non-specific abdominal pain compared to haloperidol. Importantly, as NSAIDs are known to produce dyspepsia and upper GI discomfort, this group was not included in this study.[36]

e. Renal colic

The studies included demonstrated that NSAIDs are more effective than opioids and acetaminophen for renal colic. Five studies assessed the effectiveness of NSAIDs in controlling pain from renal colic. One RCT found that IM diclofenac was equivalent to sterile water injection, while another found that lidocaine nerve block had improved VAS.[9,37] Conversely, another RCT found IM diclofenac was more effective in achieving >50% reduction in pain from severe renal colic than IV morphine or IV acetaminophen.[38] A similar RCT found that IV dexketoprofen was superior at 30 minutes to IV fentanyl or paracetamol in VAS improvement.[39] Finally, a retrospective review indicated NSAIDs and smooth muscle relaxants (ie, alpha-blockers) were the most commonly used medications for renal colic.[40]

f. Other indications

One double-blinded study showed no difference between ibuprofen, acetaminophen, or a combination of these medications in acute pediatric pain relief at 60 minutes.[41] Another study of pediatric and adult patients with viral respiratory infections showed a greater benefit of NSAIDs

in the outpatient management of fever and sore throat.[42] A randomized equivalence trial showed no difference in pain outcomes or significant adverse events in indomethacin vs prednisolone in gout treatment.[43] Another RCT (n = 200) showed no difference in fever reduction or rescue therapy with ibuprofen vs paracetamol.[44] Finally, retrospective reviews of sickle cell pain management in the ED showed increased hospitalization with opioids alone vs opioids in combination with NSAIDs (p = 0.0085). Another study indicated more return visits with NSAIDs alone, but no change in opioid prescriptions or readmissions.[45,46]

II. Dosing and route of administration of NSAIDs

Topical and intramuscular administration of NSAIDs can both be effective, but intramuscular specifically has relatively high rates of local adverse effects. There were 5 studies related to IM injections of NSAIDs in the ED. IM diclofenac was superior to oral diclofenac in achieving 50% reduction in pain at 30 minutes post-administration (absolute risk difference 12.7%).[47] Three RCTs compared doses of ketorolac and demonstrated no significant difference in pain relief between 10mg and higher doses (eg, 15mg, 30mg), while higher doses were associated with more burning at the injection site.[48–50] One study of 118 patients found an 8.5% incidence of scars, ulcers, and abscesses at the injection site from IM diclofenac.[51]

Two studies indicated the effectiveness of topical ketoprofen for acute ankle sprains and low back pain in the ED.[20,52] In an observational study (n = 28), intranasal ketorolac showed good pain relief, with 32% achieving relief within a median time of 5 minutes.[53] Finally, a single-blinded RCT (n = 99) compared scheduled ibuprofen to as-needed dosing and found no difference in pain scores or disability between the groups but slightly higher adverse events in the scheduled group after 4 days of use.[54]

III. Side effects and contraindications to NSAIDs

a. Post-surgical complications

A case-control study (n=1,503) indicated a reduction in post-operative adverse events with using NSAIDs perioperatively after GI surgery.[55] However, 2 additional studies suggest a higher risk of anastomotic failure in colorectal anastomosis with NSAID use and higher odds of reintervention, ED visits, and readmission within 30 days with GI surgery.[56,57]

b. Gastrointestinal hemorrhage

A cohort study of patients with hemorrhage (n = 517) found that 70.2% of gastrointestinal bleeds were non-variceal and that NSAID use and anticoagulant use were the only independent risk factors for non-variceal bleeds (OR 0.32, 95% CI: 0.13 – 0.83).[58] A prospective observational study (n = 67) showed that NSAID use was associated with 31.3% of gastroduodenal ulcers.[59] A retrospective study suggested coxib drugs (COX-2 inhibitors) have a lower risk of upper gastrointestinal GI bleeding than other NSAIDs.[60]

c. Comparison of acetaminophen and ibuprofen side effects in pediatric patients

A systematic review indicated equal safety and tolerability of ibuprofen and paracetamol in children, with ibuprofen showing greater efficacy in treating fever and discomfort.[2] Another study of 347 patients found ibuprofen has a lower risk of wheezing as a complication compared with acetaminophen.[61] Finally, a retrospective observational study (n = 74,387) found more reported toxic exposure to ibuprofen than acetaminophen among children under 6 years.[62] However, acetaminophen overdose unsurprisingly had higher odds of serious, adverse medical outcomes.[62]

d. Other side effects

One retrospective cohort study (n = 480) suggested there are no increased adverse events (kidney injury, bleeding, transfusion, death) in geriatric patients treated with IV ketorolac.[63] A small, retrospective study (n = 117) of cases of drug-induced anaphylaxis suggested that NSAIDs were the most frequent cause.[64] Finally, a retrospective study of low-birth-weight neonates receiving prophylactic indomethacin suggested a longer cumulative number of days of mechanical ventilation, supplemental oxygen, and continuous positive airway pressure.[65]

Discussion

Our study summarizes the pertinent literature on NSAID use in emergency departments and ambulatory settings for acutely painful conditions, which may guide use in UC settings. Many misconceptions remain about the efficacy and safety of NSAIDs compared to other pain medications. Through a systematic process to create a narrative review, our study has explored the efficacy and side effects related to common indications for NSAIDs in urgent or emergent settings. We also examined the route and dosing of these medications to mitigate further risks and improve our understanding of how to dose NSAIDs properly.

The majority of the studies found in this narrative

review related to the effectiveness and indications for NSAIDs when compared with other pain medications. Common uses of these medications included traumatic pain, headache, back pain, abdominal pain, fever, and pediatric pain.

Numerous studies compared NSAIDs with opioids for traumatic and musculoskeletal pain, with multiple RCTs and systematic reviews showing no difference in pain relief between these medications acutely but more side effects and continued use with opioids.[9–11] Conversely, 1 study showed increased efficacy of opioid/acetaminophen combination compared with ketorolac in fracture pain, and 2 other studies suggested acetaminophen is equally effective while topical capsaicin may be more effective.[15,16,22] Overall, given efficacy and side effect profiles, NSAIDs appear preferable over opioid medications, and alternatives such as capsaicin and acetaminophen can also be considered to achieve multimodal analgesia.

Headache was a common indication for NSAID use, and NSAIDs appear to be extremely effective, especially in combination with dopamine antagonist antiemetic medications (eg, metoclopramide).[25–27] This review supports NSAID use as first-line for headaches and shows the benefit of these medications compared to non-dopamine antagonists or intravenous fluids.

In atraumatic back pain, a single study showed no difference in pain reduction between acetaminophen, ibuprofen, and morphine with more side effects in the morphine group.[33] Given recent RCT data that opioid use in atraumatic low back pain is detrimental to medium-term patient outcomes (OPAL study), NSAIDs are an appropriate choice for first-line treatment in the acute phase of these symptoms, and opioids should be avoided in the routine management of these cases.[66] Conversely, a recent Cochrane review indicated there was an improvement in outcomes for patients using NSAIDs for low back pain, but that the magnitude of this improvement was small. [67] Results in renal colic generally favored NSAIDs with 2 other studies demonstrating the superiority of parenteral NSAIDs compared to acetaminophen and opioids.[9,37–39]

Various other indications were reviewed. NSAIDs were found to have benefits in addition to opioids for sickle cell disease, found equivalent to acetaminophen in pediatric pain, fever, and sore throat, and found equivalent to prednisolone for gout treatment.[41–46] These results support the critical role of inclusion of some formulation of an NSAID in the multimodal treatment of nearly all forms of pain. In many cases, these results suggest that an NSAID agent should even be the first line.

This study also reviewed the route and dosing of administering NSAIDs in ED settings. Several studies of ketorolac suggest there is no added analgesic benefit in doses >10 mg.[48–50] Importantly, given the frequency with which this medication is used in UC, it's worth noting that IM ketorolac was associated with a local, often delayed, complication in nearly 10% of patients.[51] Despite this, IM diclofenac was somewhat more rapid at achieving a 50% reduction in pain over oral administration.[47] Overall, weight-based or pain severity-based dosing of ketorolac is not supported by the evidence in this review, and the side effects of IM injection should be considered when choosing an NSAID. However, IM NSAIDs did show improved pain reduction when compared to oral medications in 1 study,[47] and likely still have a role for especially severe pain.

Other routes of administration reviewed included topical and intranasal NSAIDs. Topical ketoprofen was found to be effective in ankle sprains and lower back pain, while intranasal ketorolac showed more rapid and effective pain relief. [20,52,53] These results highlight the viability of topical and intranasal administration of NSAIDs which may be preferable in patients who cannot tolerate oral administration and lack intravenous access. One study looked at the efficacy of scheduled NSAID use compared to as-needed for pediatric ankle sprains and found no significant difference in pain reduction while having a higher rate of reported adverse effects.[54] This suggests that the necessity of scheduled dosing should be weighed before recommending this to patients at UC center discharge given the increased risk of adverse effects over pro re nata dosing.

Another aspect of NSAID use studied was the common side effects and contraindications of NSAIDs. These medications are commonly avoided perioperatively out of concern for effects on healing, and 2 studies supported this practice suggesting an increased rate of colocolonic/colorectal anastomoses failure and a slightly increased rate of postoperative complications.[56,57] However, these effects appear marginal, and 1 case-control study found that the early use of high-dose NSAIDs was associated with a reduction in overall postoperative adverse events after GI surgery.[55] Another study indicated ibuprofen use in post-tonsillectomy leads to fewer ED visits without increasing the risk of hemorrhage.[68] Overall, NSAIDs seem to have some effect on postsurgical complications, but that may be limited to GI surgeries and still can be considered as peri-operative pain control.

GI bleeding is another feared complication of NSAID use. This review indicates this caution is warranted as

NSAIDs were one of the only independent risk factors for non-variceal upper GI bleeds and were associated with 31.3% of all gastroduodenal ulcers.[58,59] COX-2 inhibitors such as celecoxib were found to have a lower association with upper GI bleeds.[60] These studies indicate bleeding risk should be assessed before administration of NSAIDs and should be carefully considered in the UC setting before suggesting NSAIDs for pain control at home.

Acetaminophen and ibuprofen are 2 commonly used non-opioid pain medications and are also used as antipyretics in pediatric populations.

Our review found multiple studies assessing differences in efficacy and safety in children. Ibuprofen was found to be equally safe to acetaminophen in children, more effective, and conferred a lower risk of breathing difficulties in another study.[2,61] Another large, retrospective study indicated children with toxic exposure to ibuprofen had less chance of a serious medical outcome when compared to acetaminophen.[62] Our review suggests that ibuprofen should be considered first line in pediatric patients with pain or fever, and is safe in children over 6 months of age.

Other implications of our review of NSAID toxicity are that ED use of NSAIDs did not increase adverse events in geriatric patients, but NSAIDs are a common cause of drug induced anaphylaxis.[63,64] It is important to note that these studies focused on clinical administration of NSAIDs and that serious adverse events were rare. However, NSAIDs are implicated as causal for many adverse effects and even hospitalizations when taken by patients without a clinician's supervision. This is a critical distinction as administration in the UC setting should be distinguished from what is safe for patients to continue at home.[69]

This study has multiple limitations, including the narrowed inclusion of only studies conducted in emergent/urgent settings. There are many studies of indications and side effects of NSAIDs performed in other clinical environments that should be considered when deciding to use them in urgent care settings. In addition, a narrative review does not include an analysis of the evidence or meta-analysis, and the studies were quite heterogeneous in their outcomes.

Conclusion

NSAIDs appear to be a safe, effective option that should be considered alongside acetaminophen for most acute painful conditions in the UC setting. NSAIDs generally show equivalent or superior pain relief when compared to opioids with fewer side effects for most indications. NSAIDs show efficacy in headache, back pain, and renal colic treatment. The predominant side effects that should be considered for UC-based administration include GI hemorrhage and anaphylaxis. However, ED use of appropriate doses of NSAIDs for acute pain did not cause significant adverse renal outcomes in geriatric patients. Additionally, alternate routes of administration have also been shown to offer significant pain relief;

most notably topical and intranasal NSAIDs appear to be effective alternatives when IV or oral NSAIDs are not accessible or deemed to be safe. This review confirms the important role the NSAID class of medications can play in the acute management of pain in urgent care and emergency department settings. ■

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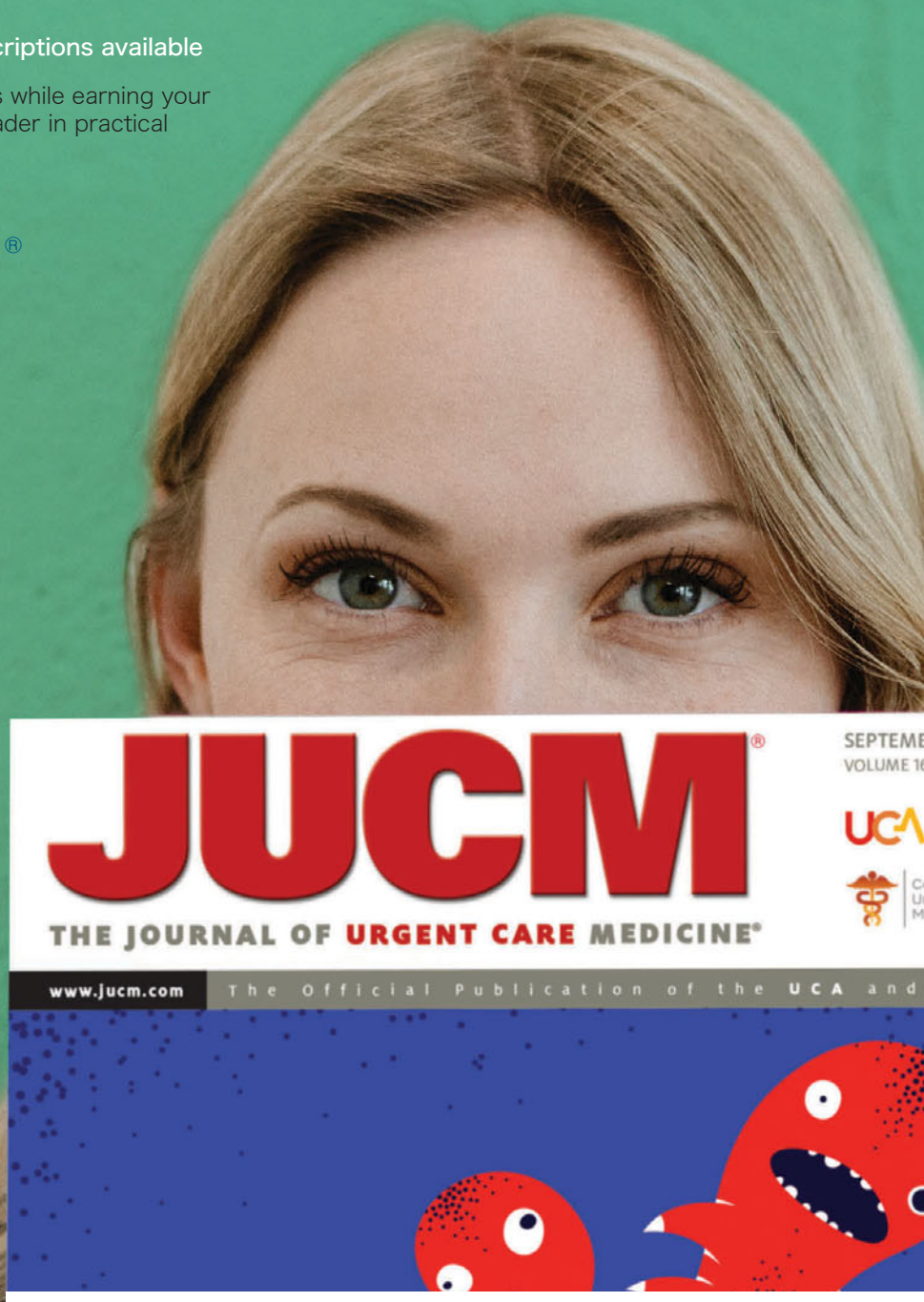

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CLINICAL CHALLENGE: CASE 1

Challenge your diagnostic acumen: Study the following x-rays, electrocardiograms, and photographs and consider what your diagnosis might be in each case. While the images presented here are authentic, the patient cases are hypothetical. Readers are welcome to offer their own patient cases and images for consideration by contacting the editors at editor@jucm.com.

38-Year-Old With Pelvic Pain After a Fall

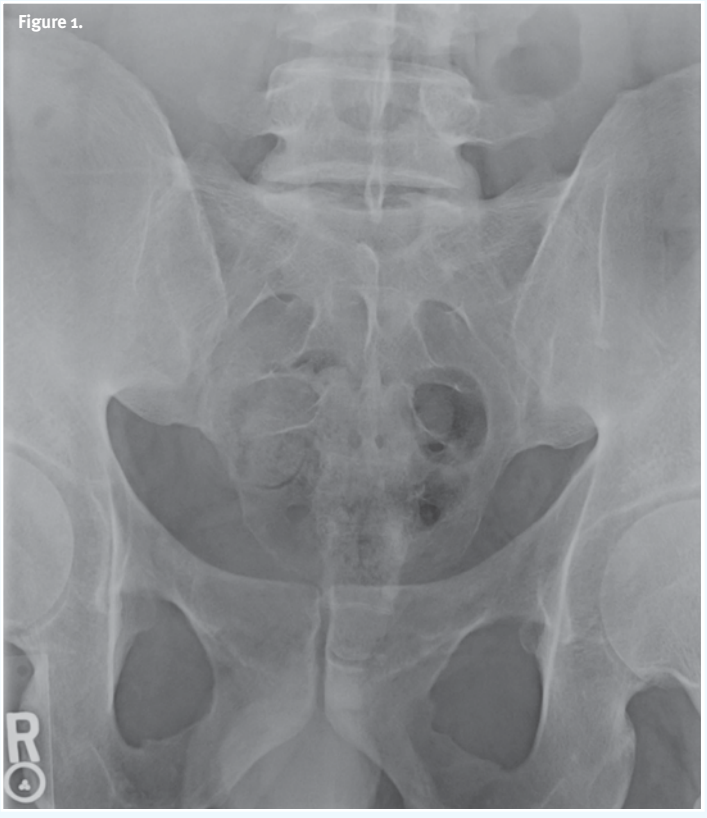


Figure 1.

A 38-year-old man present to urgent care complaining of pain around his entire pelvis after a fall on a slippery floor at home. Imaging is obtained.

Review the image taken and consider what your diagnosis and next steps would be. Resolution of the case is described on the following page.

Acknowledgment: Images and case provided by Experity Teleradiology (www.experityhealth.com/teleradiology).

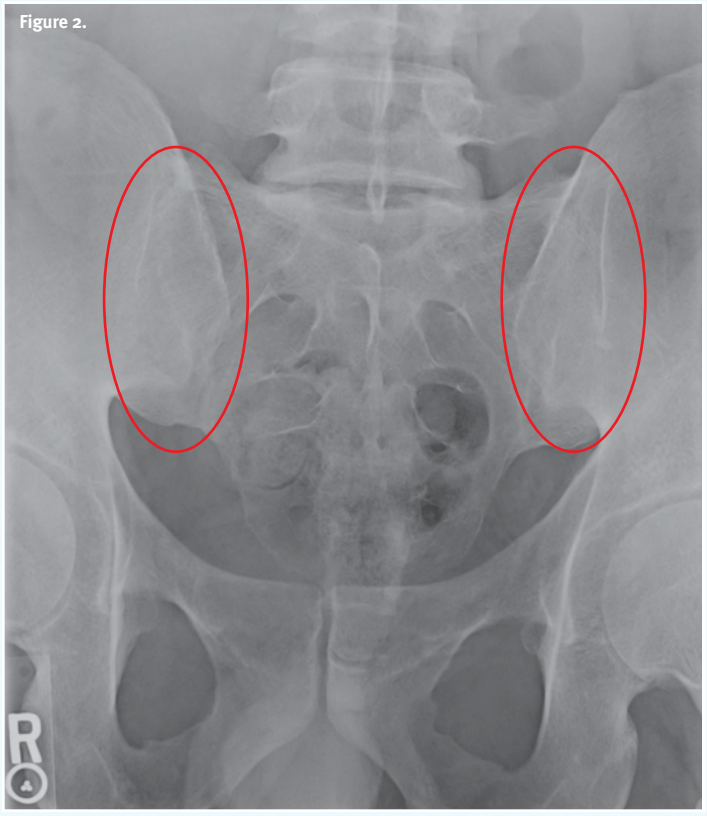


Figure 2.

Differential Diagnosis

- Vertebral compression fracture
- Pubic rami fracture
- Fused sacroiliac joints
- Tailbone (coccyx) fracture

Diagnosis

The correct diagnosis is fused sacroiliac joints. On the image above, there is no joint space present in either the left or right sacroiliac joints. This is a chronic condition that results from prolonged inflammation of the sacroiliac joints (sacroiliitis). Common causes for bilateral symmetric sacroiliac joint fusion include: ankylosing spondylitis, inflammatory bowel disease (eg, Crohn's disease, ulcerative colitis), osteitis condensans ilii, osteoarthritis, Reiter's symdrome/reactive disease, and rheumatoid arthritis (adult).

What to Look For

- Morning stiffness and pain with symptoms improved during exercise but not rest
- Pain and tenderness overlying the sacroiliac joint regions of the lower back
- Limited range of motion of the lower back

Pearls for Urgent Care Management

- Treatment with nonsteroidal anti-inflammatory medications is first line
- Referral to a rheumatologist for further evaluation of the underlying cause is warranted

21-Year-Old With Heel Lesion

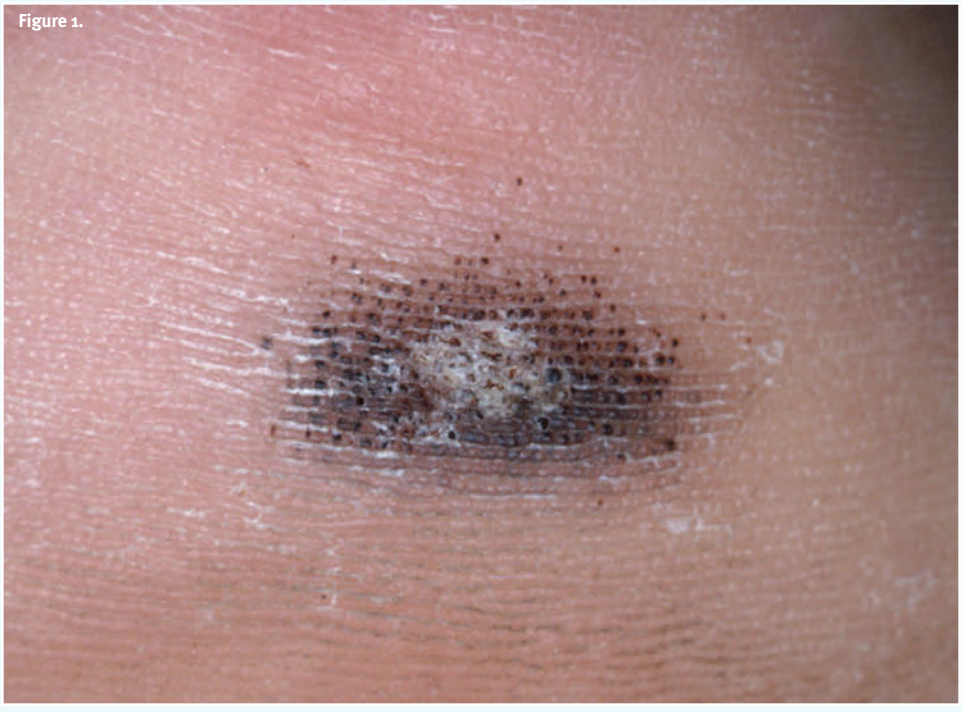


Figure 1.

A 21-year-old man presents to urgent care concerned about a painless blackish lesion that had developed on his left heel. On examination, a stippled, deeply violaceous, blackish patch with overlying scale was seen on his plantar heel. He had no history of dermatological disease but mentioned he played in a basketball tournament last week.

View the image above and consider what your diagnosis and next steps would be. Resolution of the case is described on the following page.

Acknowledgment: Image and case presented by VisualDx (www.VisualDx.com/jucm).

THE RESOLUTION

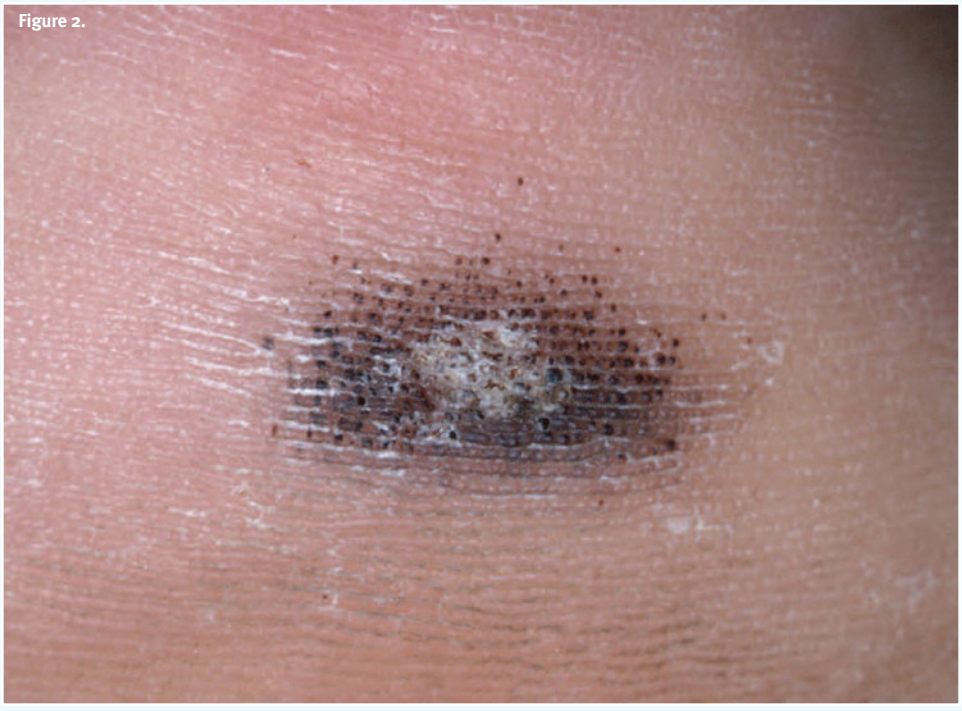


Figure 2.

Differential Diagnosis

- Acral lentiginous melanoma
- Atypical nevus
- Talon noir
- Tinea nigra

Diagnosis

The correct diagnosis is talon noir, also referred to as calcaneal petechiae. Resulting from intraepidermal hemorrhage, this asymptomatic discoloration of acral skin can be caused by shear-force injuries. Talon noir tends to present on the posterior foot, lateral foot, heel, and palm. Lateral shearing forces can cause tearing of blood vessels in the papillary dermis, common in patients who participate in athletic activities. The punctate papillary dermal hemorrhages lead to extravasation of blood into the epidermis and intracorneal retention of hemoglobin. Because of its location in the stratum corneum, it cannot be cleared by phagocytic cells.

What to Look For

- The condition is asymptomatic and painless, so patients may not recall specific etiological events
- On close dermoscopic exam, band like pigmentation may be present

Pearls for Urgent Care Management

- No intervention is required for this condition, it will resolve spontaneously
- Resolution may take 4-6 weeks and may require cessation of triggering activity
- It is important to distinguish from melanoma by its reddish color, sharply defined borders and segmented band like pigmentation

61-Year Old With Light-Headedness

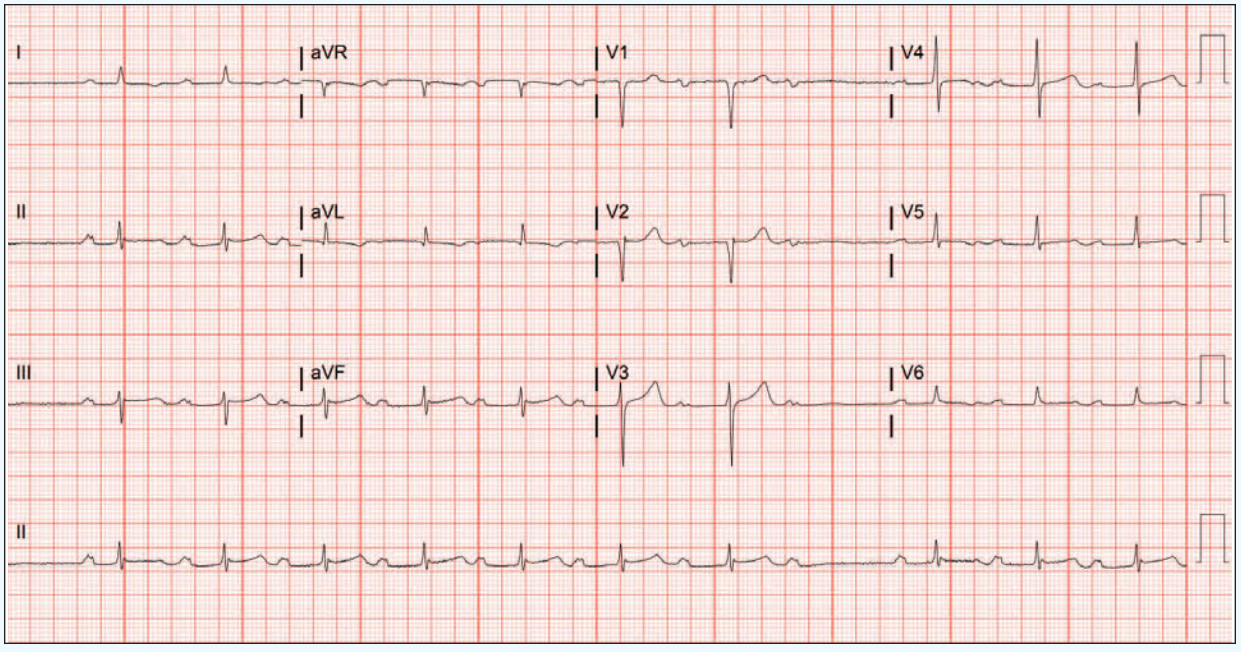


Figure 1: Initial ECG

A 61-year-old male presents to urgent care complaining of light-headedness. The patient has a medical history of hypertension and recently started metoprolol.

View the ECG captured above and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

Case presented by Benjamin Cooper, MD, McGovern Medical School, The University of Texas Health Science Center at Houston, Department of Emergency Medicine

Case courtesy of ECG Stampede (www.ecgstampede.com).

ECG STAMPEDE

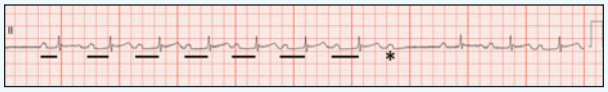


Figure 2: Progressively prolonging PR interval (horizontal lines) preceding a "dropped" P wave (asterisk). There are 8 P waves to 7 QRS complexes (ie, 8:7 conduction).

Differential Diagnosis

- Normal sinus rhythm
- First degree atrioventricular block
- Second degree atrioventricular block, Mobitz I (Wenckebach)
- Second degree atrioventricular block, Mobitz II
- Third-degree atrioventricular block

Diagnosis

The diagnosis is second-degree atrioventricular block, Mobitz I (Wenckebach). The ventricular rate is 60 beats per minute, and the rhythm is irregular. The PR interval is prolonged and progressively lengthens until a P wave is "dropped," or fails to conduct to the ventricular system, resulting in the absence of an associated QRS complex. There are 8 P waves for every 7 QRS complexes, representing 8:7 conduction (**Figure 2**).

Discussion

Atrioventricular conduction block refers to a set of disturbances in which conduction from the atria to the ventricles is delayed, intermittently blocked, or completely blocked—classified as first-, second-, and third-degree, respectively. Identifying the type of block has important prognostic implications. First-degree atrioventricular block, indicated by a prolonged PR interval (greater than 200 msec), usually suggests delayed conduction through the atrioventricular node and is generally considered to be benign when not associated with other conduction deficits.[1] Third-degree atrioventricular block occurs when there is complete atrioventricular dissociation (ie, failure of conduction between the atria and the ventricles).[2] Patients with third-degree block should be immediately referred to an emergency department (ED).

Second-degree atrioventricular block describes intermittent atrioventricular conduction and can be caused by conduction deficits in the atrioventricular node or distal. There are 2 types of second-degree atrioventricular block: Mobitz I (or Wenckebach conduction), and Mobitz II. Electrocardiographically, Mobitz I conduction is characterized by a progressively prolonging PR interval until conduction from the atria to the ventricle fails, resulting in a "dropped" beat (**Figure 2**). These blocks are often asymptomatic and can be seen in active, healthy patients without heart disease. It is usually caused by delayed conduction through the atrioventricular node and is unlikely to progress to complete heart block.[2] Transfer to the ED is not indicated in patients with Mobitz I conduction when not accompanied by significant bradycardia or other conduction deficits (eg, bundle branch block); however, atrioventricular nodal blocking agents (eg, metoprolol) should be avoided in the setting of Mobitz I conduction.

Second-degree atrioventricular block, Mobitz II is characterized electrocardiographically by a constant PR interval with "dropped" beats that fail to conduct to the ventricular system. Mobitz II is caused by conduction disease distal to the atrioventricular node and is likely to progress to complete heart block. Patients with Mobitz II should be immediately referred to an electrophysiology-capable facility for pacemaker placement.[2]

What To Look For

- The presence of more P waves than QRS complexes should prompt consideration of atrioventricular block.
- Identifying the type of block has important prognostic implications.
- First-degree and second-degree Mobitz I block generally represent delayed conduction through the atrioventricular node and are not likely to progress to complete heart block.
- Second-degree Mobitz II and third-degree block (ie, complete heart block) indicate conduction disturbance distal to the atrioventricular node.

Pearls For Initial Management And Considerations For Transfer

- Patients with second-degree Mobitz II or third-degree block warrant immediate transfer to an electrophysiology-capable facility.
- Patients with first-degree or second-degree Mobitz I block (in the absence of other conduction deficits or significant bradycardia) do not warrant transfer.
- Consider transcutaneous pacing and immediate transfer to an ED in patients with unstable bradycardia secondary to atrioventricular block.

References

1. Costa D Da, Brady WJ, Edhouse J. Bradycardias and Atrioventricular conduction block. *Br Med J*. 2002;324(March):535-538.
2. Kusumoto FM, Schoenfeld MH, Barrett C, et al. 2018 ACC/AHA/HRS Guideline on the Evaluation and Management of Patients With Bradycardia and Cardiac Conduction Delay: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhyth. *Circulation*. 2019;140(8):e382-e482.

Why Does Start-Up Contracting Take So Long?

Heather Rothermel

Consider this scenario: You've decided to open an urgent care center. You've secured funding, found the perfect location, hired amazing providers, created build-out plans to make it your own, and set a go-live date to open your doors to your community. Then you realize you haven't started contracting and credentialing. In many markets, contracting and credentialing for a start-up can take 9 to 12 months or longer, and operators must consider this timeline in the early stages.

Contracting is the process of establishing a relationship between your entity and the payer.

Credentialing is the process of linking your providers to your entity and your contract.

These 2 pieces work together to ensure you receive reimbursement for services rendered at your clinic. It is imperative that you initiate these processes as soon as possible to ensure that you are ready to accept patients in your community as an in-network provider when you open your doors.

Contracting and Credentialing Process

The first step is to identify the payers that you would like to pursue in terms of contracting and credentialing. Your goal should be to identify the payers that represent as close to 100% of the members of your community as possible. There will likely be a blend of large national payers and smaller regional payers. If you are unsure of who to go after, look at your competitors or any large health systems in your area—this is a great benchmark to get started.

Once you have identified your list, you can reach out to the payers to initiate contracting. Most payers have a dedicated provider relations phone number and many have instructions on how to join their network on their websites. In joining the network, you likely will be required to complete a demographic form or facility application. Be prepared with your physical address (including complete ZIP code plus 4 digit mail code), phone and fax number, tax identification number, type 2 group national provider identifier number, and hours of operation. You may also need to provide your billing address, billing phone and fax numbers, and a W-9.

"Contracting is the process of establishing a relationship between your entity and the payer. Credentialing is the process of linking your providers to your entity and your contract."

After the payer receives your request, they will review it, and a contractor will reach out to you with additional instructions to proceed with contracting and credentialing. Payer credentialing requirements can vary depending on the type of agreement that you pursue; it is important to make sure you understand the requirements to add a provider to your agreement both in the initial contracting phase and after your agreement is effective.

When you receive the agreement from the payer, read the agreement carefully and understand the requirements of compliance or seek the assistance of professionals who can advise you. It will be important to understand the initial terms of the agreement and when you can request to modify the terms of reimbursement within your contract in the future.

Generally, the payers will offer you 1 of 2 reimbursement methodologies. Fee-for-service reimbursement is based on the plan's established fee schedule. Each Current

Heather Rothermel is Contracting Operations Lead at Experity.

Procedural Terminology code will have an allowed amount, and, in this instance, you can anticipate being reimbursed for each service you offer. The other reimbursement type is a flat or global rate. Under this methodology, you can expect to be reimbursed one negotiated rate regardless of the acuity of care or the services that are provided. It will be important to consider your cost per visit to decide if you should try to negotiate the proposed reimbursement.

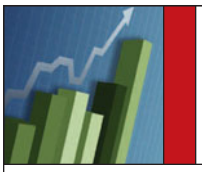
Finalize the Agreement

At the point that you are comfortable with the agreement and the reimbursement, you will want to finalize the agreement by submitting a signed copy to the payer for loading and execution. This process typically takes an additional 30 to 60 business days and begins when the payer receives the signed agreement from you. Though this process seems a bit like a black hole, the payer is actually setting up your entity and loading your fee schedule into their adjudication system with the goal of claims flying seamlessly through once you start seeing members.

When the plan has loaded your agreement, you should receive an executed agreement copy that is dually signed by your entity and the payer. It is important to retain a copy of the executed agreement that you can refer back to in the future, should you encounter any claims or billing issues. At this point, you should also check the payer's provider directory online to make sure you are listed as an in-network provider for all applicable product lines, and that your information is listed correctly.

"It is important to retain a copy of the executed agreement that you can refer back to in the future should you encounter any claims or billing issues."

The process of contracting and credentialing can be intimidating. Working with a knowledgeable advisory team that has established relationships at the payer level will help you navigate the contracting and credentialing processes. It is also likely that they will have market-level knowledge that can help you decide what payer agreements to pursue and what language or reimbursement is fair for your clinic. ■



DEVELOPING DATA

Urgent Care De Novo Growth by Operator Size, 2022-2023

Alan A. Ayers, MBA, MAcc

	1Q22	2Q22	3Q22	4Q22	2022 Total	1Q23	2Q23	3Q23	4Q23	2023 Total	YOY Change
Total De Novos	366	466	327	492	1,651	484	364	335	357	1,540	-7%
% Health System	38%	35%	22%	24%	30%	32%	34%	25%	35%	32%	6%
% Non-Health System	62%	65%	78%	76%	70%	68%	66%	75%	65%	68%	-3%
	1Q22	2Q22	3Q22	4Q22	2022 Total	1Q23	2Q23	3Q23	4Q23	2023 Total	YOY Change
Single Unit	53	69	39	139	300	79	81	67	46	273	-9%
2 to 4 Units	71	105	76	64	316	104	81	61	54	300	-5%
5 to 9 Units	71	77	54	47	249	70	46	48	33	197	-21%
10+ Units	171	215	158	242	786	231	156	159	224	770	-2%
	1Q22	2Q22	3Q22	4Q22	2022 Total	1Q23	2Q23	3Q23	4Q23	2023 Total	
Single Unit	14%	15%	12%	28%	18.2%	16%	22%	20%	13%	17.7%	
2 to 4 Units	19%	23%	23%	13%	19.1%	21%	22%	18%	15%	19.5%	
5 to 9 Units	19%	17%	17%	10%	15.1%	14%	13%	14%	9%	12.8%	
10+ Units	47%	46%	48%	49%	47.6%	48%	43%	47%	63%	50.0%	

A compilation of 2022 and 2023 de novo urgent care center data shows a 7% decline in new locations: from 1,651 de novo centers in 2022 to 1,540 in 2023.

A "de novo" center is a new urgent care location where services were not offered previously. The unit of measure is the physical site, meaning if an existing location already in operation happened to change ownership, such change is not counted as de novo growth. If a center is closed permanently, meaning services are no longer offered at the location, then it is counted as a closure.

Alan A. Ayers, MBA, MAcc is President of Experity Consulting and Senior Editor of *The Journal of Urgent Care Medicine*.

The data provided here reflect gross additions, exclusive of closures.

Overall, as the de novos saw a decrease between 2022 and 2023, the greatest decline occurred among the 5- to 9-unit operators. Single unit and 2- to 4-center operators remained steady as a percentage of total de novos. Meanwhile, the least of the declines was seen among the large "enterprise" operators that have 10 or more urgent care units.

Last year produced the addition of 486 health-system-affiliated locations versus the 490 that were added in 2022. As a percentage of total de novos, health-system-affiliated participation increased by 6% year over year (YOY), while non-health-system-affiliated participation declined by 3%. ■

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