Managing Opiate Withdrawal: The WOWS Method

by Todd Wilcox, MD, MBA, CCHP-P, CCHP-A

Over the course of my medical career, everything about opiate management and treatment has changed. This is particularly true for opiate withdrawal. Like most of us, I learned early in my career that opiate withdrawal could be treated cold turkey. In fact, a well-known correctional medical textbook instructs the following: “Opiate withdrawal is known to be very unpleasant for patients but is not generally associated with life-threatening complications.”

While that may have been true when it was written, we live in a new world of opiates that present far greater challenges clinically. As a result of multiple changes outside of our sphere of practice, we now have more patients coming in on opiates, the prescription strength of opiates is substantially stronger, illegal opiates are now of much higher purity, and opiate withdrawal is more clinically severe and can frequently result in death if not managed appropriately.

As a result of all of these factors, the Salt Lake County Jail practice group felt that it was imperative to redesign how we managed opiate withdrawal to minimize morbidity and mortality. Accordingly, we undertook a comprehensive review of the medical literature and found that the literature really did not address the issues that we were facing in a correctional setting.

Consequently, the only option we were left with was to design our own program using the literature as a guideline but customizing the program for what could be accomplished and what the priorities are in a correctional setting.

Identification and Monitoring

The first major step in redesigning our practices for opiate withdrawal was to develop a targeted tool for opiate withdrawal that was customized to correctional health. We ultimately created the Wilcox Opiate Withdrawal Scale protocol. The primary focus of WOWS is to identify clinical scenarios that cause dehydration and electrolyte abnormalities. These are the two main areas where patients can get in trouble, and an earlier intervention for vomiting and diarrhea and targeted assessment for clinically relevant dehydration became the focus of the WOWS protocol.

In my facility, any patient undergoing opiate withdrawal is assessed twice per day for a minimum of five days by nurses who have been trained in the WOWS protocol. The assessment includes a full set of vital signs, serial tracking of the patient’s clinical progress and interventions as necessary based on clinical presentation. We have used the WOWS protocol for about two years and have found it to be a much more sensitive tool for identifying patients who need additional medical assistance early enough in the withdrawal process to intervene effectively without having to send out patients in crisis.

In running this program, we have found that many of our opiate withdrawal patients are physically fragile and require medical support to withdraw from opiates safely. Patients with an abnormally low body mass index are common and they frequently experience extreme distress during opiate withdrawal. One of the changes we made with this program was to implement a mandatory height and weight measurement in the intake process using a standardized industrial scale. Patients with a body mass index less than 18 receive heightened scrutiny during their opiate withdrawal.

We also have found that young patients present a serious diagnostic challenge in the opiate withdrawal syndrome because they have tremendous physiologic reserve and they are able to maintain their vital signs in a normal range right up to the point in which they are in crisis. Thus, we have a high level of suspicion for young opiate addicts and we emphasize relying on laboratory results as opposed to vital signs in these patients to determine their need for additional medical care.

Takeaway Points

- In the modern world, opiate withdrawal is a life-threatening medical condition.
- In large institutional settings, a targeted serial screening tool like WOWS is extremely effective at standardizing treatment.
- Assessment, including vital signs and self-harm assessment, should be done twice per day for five days minimum.
- Assess for dehydration.
- Assess for comorbidities including advanced age, underlying chronic diseases and malnourishment.
- Begin targeted treatment for diarrhea and vomiting early in the withdrawal process.
- Hydrate, hydrate, hydrate using something that the patients will actually drink.
- Obtain lab work on any patients not responding to the basic protocol.
- Admit to an inpatient setting if the patient’s clinical presentation or laboratory results dictate.
- Become buprenorphine certified and use it to treat severe opiate withdrawal.

I was asked to write up this program by several clinicians at a recent NCCHC conference and to disseminate it as quickly as possible to try to improve the care for this serious condition nationally.

Self-Harm

Severe opiate withdrawal puts patients in such physical distress that self-harm and suicide are extremely frequent in this population. Indeed, many patients who die of opiate withdrawal die as a result of suicide. Therefore, when the nurses assess patients using the WOWS protocol, we found it necessary for them to do an assessment for self-harm.

Find the WOWS protocol on page 3 of this PDF.
In this scenario, it is common to encounter patients who are thinking about self-harm, and merely treating their opiate withdrawal adequately resolves the issue for them. Consequently, we view adequate opiate withdrawal treatment to be a critical component of our suicide prevention plan. Since implementation of this protocol, we have seen significant decreases in suicide attempts and suicide completions in our patient population.

**Targeted Outpatient Treatment**

In the general population setting, this program prompts aggressive targeted treatment for diarrhea, vomiting and dehydration. For diarrhea, we typically use loperamide. For vomiting, the first drug of choice is promethazine, followed by ondansetron if the patient has clinical issues with the promethazine.

We also place a significant emphasis on oral hydration. All nurses are supplied with bottles of Gatorade that they hand out freely to any patient on the withdrawal protocol. In addition, custody staff has created “hydration stations” that consist of large coolers of Gatorade that offer open and unlimited access to patients who are withdrawing. This program has proven to be invaluable in minimizing complications from withdrawal syndrome. Say what you want, the water in correctional facilities is disgusting. The pipes are old, the water tastes bad, the water is not cold and inmates will not drink it, especially when they are sick. Believing that your inmates have adequate access to water, that it is sufficient to meet their hydration needs and that they will actually drink it is a deviation from rational clinical thought.

Additionally, patients with a low body mass index are immediately started on double portion diets as well as nutritional supplementation like Ensure, and that supplementation is continued while they are on the withdrawal protocol.

**Targeted Inpatient Treatment**

For patients who do not respond to the early outpatient interventions, more aggressive surveillance and treatment are necessary. We estimate that between 5% and 10% of our patients undergoing opiate withdrawal need care at this level.

The first step in caring for these patients is to obtain basic laboratory assessments, including a CBC and a CMP to assess their electrolytes, renal function and critical blood components. It is common to identify abnormalities that require correction or additional workup in these patients. These individuals are typically admitted to an inpatient setting where they can be monitored much more closely and appropriate interventions, including IV fluids and electrolyte replacement, can occur.

Treatment in the inpatient setting also allows for much more aggressive medical management. When clinically appropriate, a primary therapy used to manage these serious opiate withdrawal patients is the initiation of a buprenorphine/naloxone (Suboxone) taper. We have found incredible, almost magical, success with this medication. We typically start these patients at 16 mg buprenorphine / 4 mg naloxone and cut that dose in half every two to three days. The clinical turnarounds you can see in these patients is nothing short of miraculous.

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**Wilcoxon Opiate Withdrawal Scale (WOWS Protocol)**

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<thead>
<tr>
<th>Name:</th>
<th>DOB:</th>
<th>MRN#:</th>
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<tbody>
<tr>
<td>Location:</td>
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<td>HR:**</td>
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<tr>
<td>Temp:</td>
<td>Resp. Rate:</td>
<td>SaO2:</td>
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<tr>
<td>BMI:</td>
<td># of Gatorade Given</td>
<td># of Vomits since last check**</td>
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**RESTING PULSE RATE**(wait >1 min after a position change)
0 = Pulse 100 & Below  
2 = Pulse 101-120  
4 = Pulse >120

**GI UPSET** *(in the last 1/2 hour)*:  
0 = No GI symptoms  
1 = Stomach cramps  
2 = Nausea or loose stool  
3 = Vomiting or diarrhea  
5 = Multiple episodes vomiting/diarrhea

**SWEATING**(over last 1/2 hour):  
0 = No report of chills or flushing  
1 = Subjective report of chills or flushing  
2 = Flushed or observable moistness on face  
3 = Beads of sweat on brow or face  
4 = Sweat streaming off of face

RESTLESSNESS *(observation after assessment)*  
0 = able to sit still  
1 = Reports difficulty sitting still, but able to do so  
3 = Frequent shifting or extraneous arm/leg movements  
5 = Unable to sit still for more than a few seconds

ANXIETY or IRRITABILITY:  
0 = None  
1 = Patient reports increased irritability or anxiousness  
2 = Patient obviously irritable or anxious  
4 = Patient participation in assessment difficult due to irritability or anxiety

YAWNING *(observation after assessment)*:  
0 = No yawning noted  
1 = Yawning once or twice during assessment  
2 = Yawning three or more times during assessment  
4 = Yawning several times per minute

SINUS CONGESTION or TEARING *(not cold or allergy symptoms)*:  
Not present = 0  
1 = Nasal stuffiness or unusually moist eyes  
2 = Nose running or tearing  
4 = Nose continually running or tears streaming down face

PUPIL SIZE:  
0 = Pupils pinned / normal size for room light  
1 = Pupils possibly larger than normal for room light  
2 = Pupils moderately dilated  
5 = Pupils dilated until only rim of the iris is visible

GOOSEFLESH SKIN:  
0 = Skin is smooth  
3 = Piloerection of skin felt or hairs standing up on arms  
5 = Prominent piloerection

TREMOR *(observation after assessment)*:  
No tremor = 0  
1 = Tremor can be felt, but not visualized  
2 = Slight tremor visualized  
4 = Gross tremor or muscle twitching

BONE or JOINT ACHES *(for a patient with previous pain only rate the increased amount attributed to opiate withdrawal)*:  
0 = Not present  
1 = Mild diffuse discomfort  
2 = Patient reports severe diffuse acheing of joints/muscles  
4 = Patient rubbing joints/muscles and unable to sit still due to discomfort

**TOTAL WOWS SCORE:**

**WOWS RATER MIS#:**

"Are you having any suicidal or self-harm thoughts?"  
Referral for Suicidal Ideation made to: (blank for denies SI)

**STUDY MEDICATION ADMINISTRATION:**  
(circle one)  
Phenergan 25mg / Zofran 8mg  
Imodium 2mg

Notes (intervention documentation):  
PRN medication education provided:  
Physician reviewed:  
Date:  

**HR >120 x2 successive checks despite interventions or Vomiting x2 successive checks after starting Phenergan contact MD to get labs ordered.