

# Correlation of Misuse of Narcotics with the Pain Health Assessment and the Opioid Risk Tool: An Analysis of 13,986 Patients

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## Background & Objective

With the significant rise in prescription opioid overdoses since the mid-1990's the CDC has called for "Further defining populations at greater risk is critical for development and implementation of effective interventions."<sup>1</sup> The CDC also noted patients at risk for prescription overdose were much more likely to receive high dose narcotics exceeding 100 mg of morphine equivalent per day<sup>1</sup>. Michigan Pain Consultants (MPC) has used the Opioid Risk Tool (ORT) with permission from Lynn Webster, MD as part of a comprehensive care management system.<sup>2</sup>

The goal is to refine specificity and sensitivity of the ORT and its use as a predictive tool for narcotic misuse and abuse.

## Study Methods

### Clinical Setting and Patient Selection

The study was conducted at MPC, an interdisciplinary community-based pain medicine practice, based in Grand Rapids, MI established in 1984. The practice has 7 clinical locations covering a service area of 6 counties in West Michigan. The data was collected using the PRISM™ patient management system, a digital toolbox, containing among other components, the Pain Health Assessment (PHA), a patient reported health outcomes tool. The information is routinely gathered from chronic pain patients in the practice using IRB approved language in the consent forms.

A detailed analysis of observed behaviors associated with narcotic misuse and/or patients on high dose narcotics was constructed and correlated with elements in the PHA and ORT.

An independent-samples t-test was run on 13,986 de-identified unique patients.

Data was further evaluated using Shapiro-Wilks test and Chi-squared tests.

## Pain Health Assessment

A multidimensional structured self-report questionnaire completed on an I Pad prior to seeing the physician. The PHA assesses disease presence, pain characteristics, physical function (e.g. self-care, mobility) and psychosocial function (e.g. emotional and social health dimensions of depression, anxiety, life control and social support). Questions from the SF-36 and the ORT are included. Responses were coded on an 11 point scale with 0 "most positive" and 10 "most negative".

**Miscreants** were defined as patients who demonstrated one or more of the following:

- Abnormal Michigan Automated Pharmacy Surveillance Program (MAPs )
- Abnormal urine drug screens (UDS)
- Problems managing opiate prescriptions
- Poor behavior with clinic staff regarding opiate prescriptions

## Results

### ORT Correlations with Miscreant Behavior and High Dose Narcotic Consumption

Between September 2012 and January 2013, there were 256 patients identified as "miscreants" and an additional 704 in the high dose narcotic consumption category receiving greater than 100 mg of oral morphine equivalents per day.

### Distribution of ORT Categories

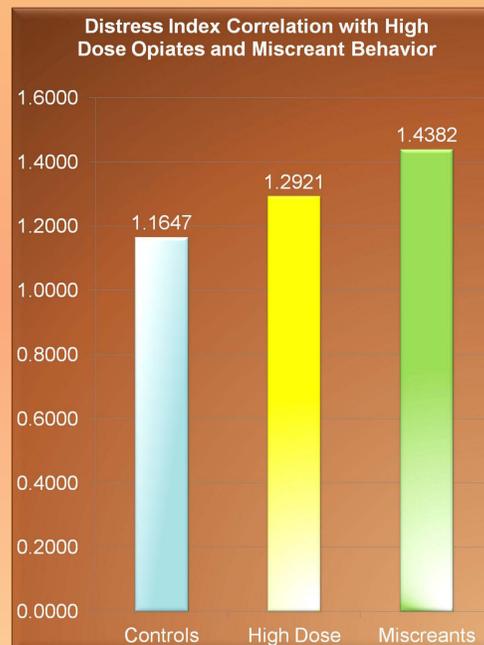
	Control	High Dose	Miscreant
Low ORT	82%	73%	66%
Moderate ORT	14%	22%	23%
High ORT	4%	5%	11%

**Distress Index** is composed of PHA questions relating to:

- Anger
- Depression/Anxiety
- Life control

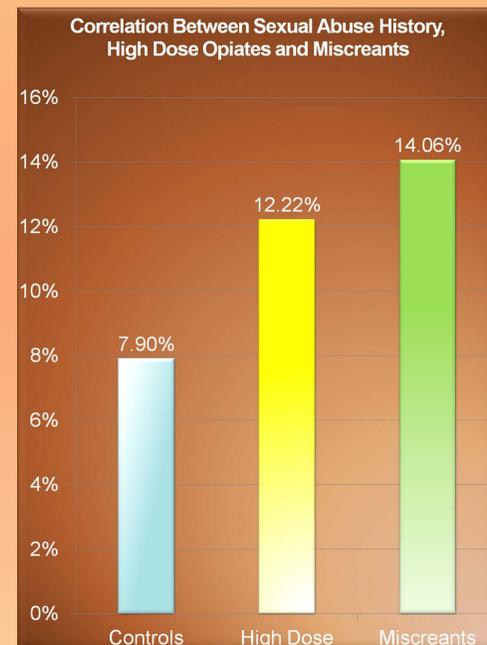
### Correlations of Distress Index with Controls, High Dose and Miscreants

The Distress Index was compared with the sum scores of each of the three subject groups to determine if there were differences. The Distress Index sum score showed statistical significance between the groups.



### Correlation of Sexual Abuse History and Miscreant Behavior and High Dose Narcotic Consumption

The Pearson chi-square test for association was conducted for each of the three group combinations. This measure was viewed as the optimal statistical procedure because both variables were categorical. A significant association between whether a subject was in the control or high dose group and the reporting of sexual abuse was identified.



## Discussion

Our data supports the ORT as a tool in assessing the risk of opioid misuse. Also, a history of sexual abuse is a valid component which poses a weak but definite increase in risk for narcotic misuse.

Elements in the PHA, including the Depression/Anxiety Index, the Anger and Relationship Index and Life Control Index can augment the ORT as a predictor of opioid misuse.<sup>3,4</sup> Further analysis of PHA data, to be detailed later, will indicate additional correlations that could be predictive of opioid misuse.

### Key Points

- ORT scores were significantly different for miscreants vs. controls
- ORT scores were significantly different for high opioid users vs. controls
- Separation between miscreants/high dose and controls could be improved by assessing anger and impairment of life control issues
- MPC now has data on over 1800 miscreants and high dose users
- This data reveals additional markers that distinguish between miscreants/high dose and controls

## References

- 1) CDC Morbidity and Mortality Weekly Report CDC Grand Rounds: Prescription Drug Overdoses — a U.S. Epidemic MMWR / January 13, 2012 / Vol. 61 / No. 1
- 2) Lynn R. Webster, MD, and Rebecca M. Webster. Predicting Aberrant Behaviors in Opioid-Treated Patients: Preliminary Validation of the Opioid Risk Tool Pain Medicine Vol. 6 2005 432 – 442
- 3) Helen M. Pettinati, Charles P. O'Brien, William D. Dundon; Current Status of Co-Occurring Mood and Substance Use Disorders: A new Therapeutic Target, American Journal of Psychiatry, 2013 170(1):23-30
- 4) Davis, Lori; Uezato, Akihito; Newell, Jason M; Frazier, Elizabeth; Major depression and comorbid substance use disorders, Current Opinion in Psychiatry. 21(1):14-18, January 2008

### Factors Considered in the Opioid Risk Tool

Family History of Substance Abuse  
Personal History of Substance Abuse  
History of Female Preadolescent  
Other Psychological Diseases

Age  
Depression  
Sexual Abuse

Low Risk 0-3; Moderate Risk 4-7; High Risk ≥ 8