Screening for Risk of Opioid Use Disorder in Patients with Cancer

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Abstract

Opioid Use Disorder (OUD) is an ongoing epidemic that effects millions of individuals worldwide. There is limited research on OUD in patients with cancer and standardized screening for OUD is largely no utilized in the oncology setting, although a high percentage of cancer patients will receive an opioid prescription during oncology treatment. This study aimed to address this gap by implementing the Opioid Risk Tool- Revised (ORT-R) in oncology clinics to assess the scope of high-risk individuals among this population. The ORT-R, a validated screening tool, was introduced to providers and administered to new oncology patients at four Oregon Health and Science University (OHSU) Knight Cancer Institute clinics. Data collection occurred over three months, assessing completion rates and identifying high-risk individuals. Implementation strategies involved staff training sessions, emphasizing the importance of OUD screening, and integrating the ORT-R into routine new patient paperwork. Among 149 oncology patients completing the ORT-R, 13.42% screened high risk for developing OUD. The results align with existing literature, supporting the efficacy of using the ORT-R in oncology settings, and reinforcing the need for standardized screening for OUD in oncology patients.

Problem Description

Opioid Use Disorder (OUD) is an ongoing epidemic, affecting 2.7 million individuals in the United States (US) and over 16 million worldwide in 2020 (Centers for Disease Control and Prevention [CDC], 2022). The CDC (2022) estimates almost 69,000 people died in 2020 in opioid related overdoses. Preux et al. (2022) estimated that 8% of individuals living with chronic cancer-related pain had a coexisting OUD, and 23.5% were at risk for developing a use disorder. The coinciding incident of OUD and cancer can be a result of (1) patients with a history of OUD who then develop cancer or (2) patients with cancer who then develop OUD (Ganguly et al., 2022).

Of patient receiving curative-intent therapy, 43% to 57% reported moderate to severe pain; furthermore, the prevalence of moderate to severe pain is up to 75% of those with advanced disease (Paice, 2018). Opioids are thought to be an essential analgesic agent in the treatment of moderate to severe pain, although they carry the risk of dependence, addiction, and overdose (Jairam et al., 2020). A comprehensive review by Abdel Shaheed et al. (2023) found that nonsteroidal anti-inflammatory drugs (NSAIDs) and antidepressant medication might be as efficacious as opioids for moderate to severe cancer pain. It is estimated that 55% of oncology patients receive an opioid prescription within 12 months of diagnosis (Yusufov et al., 2019). Paice (2018) states that 42% of individuals report inadequate analgesic management of cancer pain, making cancer pain specifically difficult to treat; however, the addition of treating cancer pain in individuals with OUD becomes more convoluted due to the need to address treatment of OUD in addition to acute pain. Buprenorphine-naloxone has been effective in treating OUD in cancer patients and allows for the addition of full-agonist opioids for acute pain (Moryl et al., 2020).

There are many barriers to the effective treatment of cancer pain in individuals with OUD. In a study designed to assess interprofessional oncology providers' knowledge and experience of OUD in patients with cancer, McNally et al. (2022) found that treating OUD was a topic of concern for providers. The providers reported low confidence in treating cancer patients with OUD and the need for more OUD-specific training (McNally et al., 2022). According to Moryl et al. (2020), the first step in improving pain

management safety is the initial identification of individuals with OUD before starting analgesic treatment. Screening for OUD in patients with cancer is imperative to ensure providers ability to provide safe and effective pain management.

Available Knowledge

Nonmedical opioid use (NMOU), including use of opioids without a prescription or use different than prescribed, is prevalent in the U.S. and can have long-term consequences in patients with cancer, including: development of OUD, lack of preventative and adherence practices to cancer treatments, and increased morbidity and mortality (Yennurajalingam et al., 2021). In a prognostic study (n=1554), Yennurajalingam et al. (2021) found that 19% of patients with cancer receiving long-term opioid treatments displayed NMOU behaviors, the most common being unscheduled clinic visit for opioid refills. Although opioids are a commonly prescribed treatment in cancer pain, there a few guidelines for screening and monitoring for OUD or NMOU in the oncology setting (Liebling et al., 2019).

In a qualitative study (n=22) addressing general practitioners' perspective on risk of opioid misuse in people with cancer, providers were less aware of the risk of NMOU in patients with cancer than those without cancer (Luckett et al., 2020). In a similar study, Liebling et al. (2019) found that pain management physicians (n=105) were twice as likely to not use a baseline screen for opioid use in patients with cancer than those without cancer. Furthermore, in patients who refused a toxicology screen, 92.2% of providers would not refill a prescription in a patient without cancer versus 68% of providers would refill a prescription in patients with active cancer.

Without screening and management in patients with cancer, OUD or NMOU may go unnoticed and untreated. Screening, brief intervention, and referral to treatment (SBIRT) is one of the evidence-based methods to screen for substance use and is routinely implemented in primary care and emergency medicine settings (Choflet et al., 2020). After implementing a quality improvement (QI) project to train providers in SBIRT screening in an oncology setting, Choflet et al. (2020) found that 15% of patients

with cancer had a positive SBIRT, which is consistent with the rates in the general population. In systematic review looking at four studies which used the Opioid Risk Tool (ORT) in patients with cancer, 13-21.5% of individuals were identified as moderate to high risk of opioid misuse (Keall et al., 2022). One study, using the Drug Abuse Screening Test (DAST 10) to analyze substance use in advanced cancer patients, found that 85% of patients were taking prescribed painkiller, mainly opioids, and 6% of patients screened positive for drug misuse (Webber et al., 2020). This reinforces that patients with cancer are not exempt from needing the screening for OUD, and in doing so will allow providers to implement patient-centered harm reduction interventions and treatment (McNally et al., 2019).

Rationale

This project was structured by the levels of disease prevention framework, consisting of primary, secondary, and tertiary prevention (CDC, n.d.). Primary prevention focuses on interventions before health effects occur, including vaccines, altering risky behaviors, and eliminating substances which are associated with diseases or conditions. Secondary prevention involves screening to identify diseases in early stage before symptom onset, examples include mammograms or routine blood pressure testing. Tertiary prevention manages the disease to slow or stop progression, such as will medications or rehabilitation (CDC, n.d.). This project screened individuals mainly on primary and tertiary prevention levels: identifying individuals at risk for developing OUD before they are prescribed opioids (primary prevention) and identifying individuals with a history of prescription or illicit drug misuse (tertiary prevention). This will ensure individuals will be treated accordingly, whether it be monitoring for the development of OUD or initiating treatment for preexisting OUD.

The ADKAR (awareness, desire, knowledge, ability, and reinforcement) model was used to encourage staff adaptation and implementation of this project (Joseph Galli, 2018). The steps included: 1) raising awareness to the staff of the planned change; 2) instilling desire to change according to the plan; 3) cultivating knowledge of the purpose and how to implement the change; 4) ability of the staff to implement the change into practice; and 5) reinforcement of change for perpetual implementation of the

new method (Paramitha et al., 2020). The goal of this model was to identify staff resistance, help transition staff through the change process, create a successful plan for changes, and maintain the change past the implementation process (Paramitha et al., 2020). The project used the ADKAR method to educate the clinic staff on the implementation of screening patients for OUD, why OUD screening is important to instill desire to change and teach how to implement the screening tool. The staff had the ability to carry out the change in the clinic setting; furthermore, results from the screening tool and the potential positive outcomes with utilizing the results was reinforced with hopes of long-term patient screening.

Specific Aims

This project aimed to identify individuals at risk of developing OUD. By January 2024, all new oncology patients at 4 locations of the Oregon Health and Science University (OHSU) Knight Cancer Institute will be screened using the Opioid Risk Assessment Revised (ORT-R) before initiation of opioids for treatment of cancer pain.

Context

This project was implemented at 4 locations of the OHSU Knight Cancer Institute located in Gresham, Tualatin, Beaverton, and Portland. These are urban outpatient ambulatory cancer clinics with a patient population who are treated for all types of solid and hematologic malignancies. The clinic provider staff is made up of physicians, advanced practice providers, and palliative care providers. There are no current screening tools in place to identify opioid misuse in this patient population; therefore, the prevalence of OUD and NMOU is unknown.

Interventions

The ORT-R (Appendix C) is a validated screening tool to assess risk for opioid misuse in individuals who are prescribed opioids for the treatment of pain (Cheatle et al., 2019). This tool consists of nine items which cover the following categories: personal and family history of substance misuse, age, and history of certain psychiatric disorders. Results are scored from 0 to 9 and ranked by low risk (0-2)

and high risk (≥3). Although the ORT-R was initially created to predict OUD in patients with chronic nonmalignant pain, some studies have implemented the originally ORT to assess risk in patients with cancer pain (Barclay et al., 2014; Oh et al., 2022). Implementation of the ORT-R at the OHSU Knight Cancer Institute clinics was used to help identify patients with cancer who have a history of OUD or those at risk for developing OUD before the initiation of opioids to treat cancer pain.

The screening tool was introduced to the providers during a monthly meeting and the rest of the staff during morning huddle where it was discussed what the ORT-R is, why screening for OUD is important, and how to implement the ORT-R. The ORT-R was given to all new patients at the clinic at the initial visit along with all intake forms. This project was reviewed at the end of three months to assess the following: how many patients completed the tool and how many are determined to be high risk.

Study of the Interventions

The study of this intervention included monitoring the number of oncology patients that are screened at high risk of OUD according to the ORT-R. Additionally, the ORT-R will identify patients with a history of all substance use, including alcohol, illegal drugs, and prescription drugs. This data evaluates if additional screening and interventions are needed for individuals before or during the initiation of opioids to treat cancer pain.

Measures

The primary outcome measure is the percentage of individuals who screen high risk on the ORT-R. The ORT-R is a validated tool to identify patients who are at high risk for developing OUD before receiving an opioid prescription. Data collection occurred over three months using the ORT-R for all new patients at the Knight Cancer Institute. The process measures in this project are the percentage of new patients who completed the form. This will indicate how receptive the patients are to the screening. As a balancing measure, considering that the addition of a new screening tool increases staff workload, the ORT-R will be integrated into the routine forms given at every initial visit.

Analysis

Data was collected over three months and organized into a spread sheet including the following information: number of new patients who received the ORT-R at the first visit, number of patients who completed the ORT-R, and number of patients that screened high risk according to the ORT-R. Variation in data could be due to patient's subjective interpretation and responses to the screening questions. Data will be collected as written on the ORT-R, but form of screening may be reassessed based on data and response rate. The rate of high-risk patients was calculated, and patient identifiers were not collected for this project.

Ethical Considerations

An ethical consideration for this project included working with a stigmatized population. In a study surveying 361 primary care providers, providers reported high levels of stigmatized attitudes towards patients with OUD, less than 30% reporting willingness to have a person taking medication for OUD marry a family member or live in the neighborhood; furthermore, this stigma was associated with less support for increasing access to OUD treatment and lower likelihood of prescribing medication to treat OUD (Stone et al., 2021). Stigma towards patients with substance use disorder discourages patients from seeking care and significantly jeopardizes the care given (Adams & Volkow, 2020). In an effort to reduce provider and staff stigma, a presentation on the importance of OUD screening and treatment will be given to the staff.

Results

Between September 26th, 2023 and January 8th, 2024, all new patients at the participating OHSU Knight Cancer Institute clinics received the ORT-R as a part of the new patient paperwork packet. In total, 349 ORT-R forms were collected. It was determined that 167 of the patients screened were benign hematology patients and were excluded from the study, as the focus of the study was oncology patients.

There also were an additional 5 screening tools that did not have a patient label and were excluded due to inability to determine if the patient was an oncology or hematology patient.

The remaining 177 screening tools were determined to be oncology patients. Of the oncology patients, 28 screening tools were left blank or were incomplete (15.8%). The mean age of the patients with blank or incomplete screening tools was 62. Of the blank forms, 53.57% were female and 46.43% were male. Of the 149 oncology patients that completed the ORT-R from all clinics, 20 screened high-risk for developing OUD (13.42%). The mean age of the oncology patients screened was 66 years old. Of the oncology patients screened, 59.32% were female and 40.68% were male.

Summary

This QI project sought to screen oncology patients at the OHSU Knight Cancer Institute for risk of developing OUD. The aim was to implement a standardized screening tool (ORT-R) for new oncology patients at the OHSU Knight Cancer Institute clinics to identify those at risk for developing OUD before receiving an opioid prescription. The desired outcome was to determine the percentage of oncology patients that high risk for OUD, and if permanent implementation of the ORT-R at the clinics is indicated. Previously, the clinics did not have a standardized tool for screening patients. Through implementing the ORT-R at multiple OHSU Knight Cancer Institute clinics, large set of data was collected to analyze the overall oncology population's OUD risk.

Interpretation

Without the clinic having standardized screening implemented before this project, there was no data to compare the outcome with and limited anticipation of what would result of the project. This study revealed that 13.42% of new oncology patients screened high risk for OUD according to the ORT-R. This percentage is comparable to previous research utilizing the ORT in oncology settings (Keall et al., 2022), where the range was reported to be between 13% and 21.5%. The consistency of these findings with existing literature suggests that the ORT-R is effective in identifying individuals at risk for OUD in the

oncology population. Although this data suggests a significant proportion of oncology patients being high-risk for developing OUD, there is limited research on how to utilize that information in cancer pain. Opioids are frequently prescribed to cancer patients, estimating 55% of patients will receive an opioid prescription within 12 months of diagnosis (Yusufov et al., 2019). Although opioids are thought to be an essential analgesic agent for moderate to severe pain (Jairam et al., 2020), recent research suggests that NSAIDs and antidepressants might be as effective as opioids for treating moderate to severe cancer pain (Abdel Shaheed et al., 2023).

Implementing the ORT-R permanently has to potential to greatly impact the care plan for patients who are identified as high-risk for developing OUD. This highlights the need to focus on patient-centered care plans that consider the risk and safety in prescribing opioids for high-risk patients. Recent research by Abdel Shaheed et al. (2023) may suggest that utilizing other medications for moderate to severe pain might be just as effective as opioids, a hopeful alternative to opioids in high-risk patients. Identifying the need for standardized screening is only the first step, and continued research in the overlap in treating cancer pain in high-risk individuals is necessary. Further provider and staff training may prove beneficial in identifying high-risk patients and adopting guidelines for safely treating cancer pain in this population.

Limitations

Despite the relatively high completion rate of the screening tool, the presence of blank or incomplete forms (15.8%) indicates the need for further strategies to ensure comprehensive data collection. Future implementations may benefit from additional staff training or patient education to improve completion rates. Additionally, 12 patients reported a personal history of alcohol, illegal drug, or prescription drug abuse on the ORT-R and yet still screened as low risk. Specifically, 4 of these patients reported personal history of prescription drug abuse but only had a score of 2 (low risk). If these 12 individuals were included in the high-risk category, it would increase the high-risk rate to 21.48%, above the previous research range. This signifies a significant gap in identifying high risk individuals bringing into question the efficacy of the ORT-R.

Conclusions

In this QI project, the ORT-R captured a significant percentage of oncology patients who are high risk of developing OUD. These results support the need to permanently implement a standardized screening tool to identify patients who are high risk before receiving an opioid prescription. A greater understanding of how identifying oncology patients as high risk impacts the treatment plan is needed. More research on treatment options for cancer pain in a patient with a history of OUD or is at risk for OUD can help guide provider's in safely treating cancer pain in these individuals. Overall, this QI project highlights the need to identify OUD risk in the oncology population, and continue to further research how to safely prescribe opioids in a high risk patient population.

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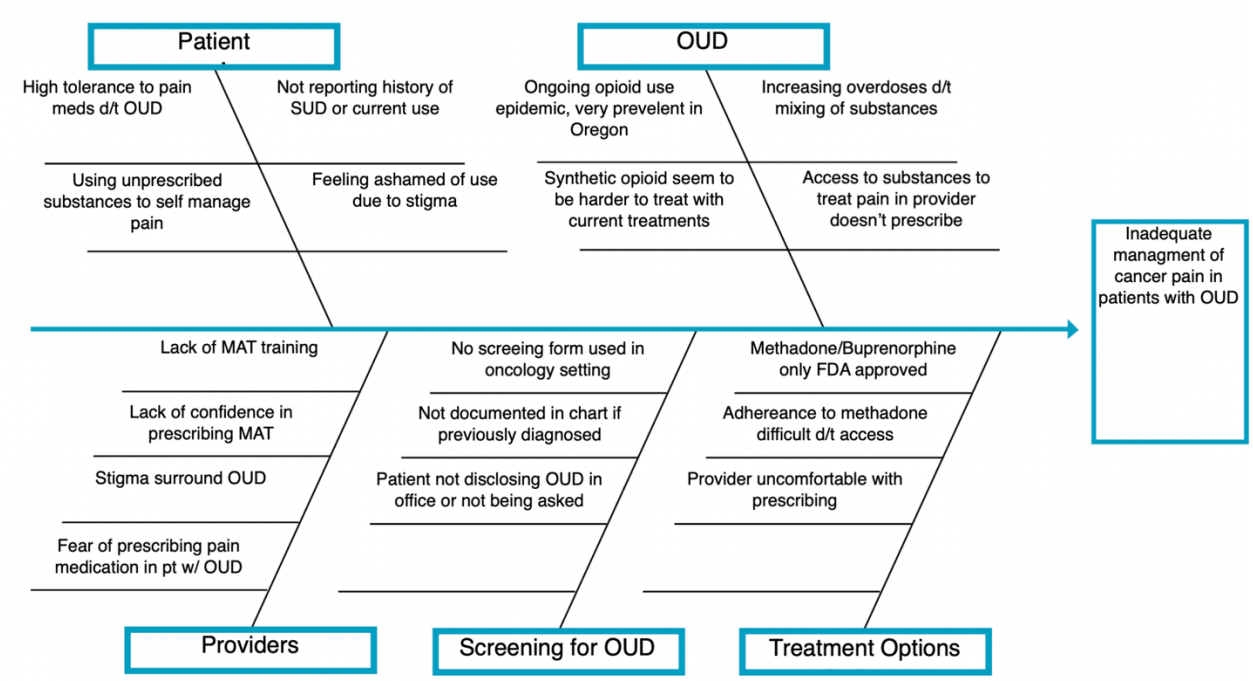
Appendix A

Project Timeline

	June	July	Aug	Sept	Oct	Nov	Dec	Jan-Mar
Finalize project design and approach (703A)	X							
Complete IRB determination or approval (703A)	X							
Implement ORT-R for 3 months				X				
Final data analysis (703B)								X
Write sections 13-17 of final paper (703B)								X
Prepare for project dissemination (703B)								X

Appendix B

Cause and Effect Diagram



Appendix C

Opioid Risk Tool - Revised (ORT-R)

The revised ORT has clinical usefulness in providing clinicians a simple, validated method to rapidly screen for the risk of developing OUD in patients on or being considered for opioid therapy.

Opioid Risk Tool – OUD (ORT-OUD)

This tool should be administered to patients upon an initial visit prior to beginning or continuing opioid therapy for pain management. A score of 2 or lower indicates low risk for future opioid use disorder; a score of >/= 3 indicates high risk for opioid use disorder.

Mark Each Box That Applies	Yes	No
Family history of substance abuse		
Alcohol	1	0
Illegal drugs	1	0
Rx drugs	1	0
Personal history of substance abuse		
Alcohol	1	0
Illegal drugs	1	0
Rx drugs	1	0
Age between 16-45 years	1	0
Psychological disease		
ADD, OCD, bipolar, schizophrenia	1	0
Depression	1	0
Scoring total		

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