Opioid Use Patterns in Patients With Chronic Pancreatitis and Concomitant Mental Illness: A Propensity-Matched Cohort Analysis

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INTRODUCTION

Chronic pancreatitis (CP) is commonly associated with pain that can be difficult to manage. This can result in high rates of healthcare utilization and chronic use of opioid analgesics.

Many patients with CP have concomitant mental health disorders (MHDs) which may be associated with greater disease burden. Genetic links between CP-associated pain and MHDs have been described.

Given the current opioid epidemic trend, it is critical to assess whether concomitant MHDs affect opioid usage patterns in CP patients. The aim of this study was to identify whether patients with coexisting CP and mental illness have higher opioid usage compared to their counterparts without any diagnosed mental illness.

METHODS

- Using a large electronic health record-derived national dataset (TriNetX), we identified two cohorts of patients with chronic pancreatitis from 2010-2020, one with coexisting mental health disorders and one without.
- Propensity score matching (1:1) was performed based on age, sex, race, ethnicity, and alcohol and nicotine dependence.
- The primary outcome was a new diagnosis of opioid use disorder at 3 years after the first diagnosis of CP.
- Secondary outcomes: any opioid use, long-term opioid use, opioid overdose, and all-cause mortality.

RESULTS

- After matching, two cohorts of 48,960 patients remained for analysis. Baseline characteristics and matching results are in Table 1.

Table 1: Characteristics of Propensity-Matched Cohorts, After Matching

	CP WITH MHD	CP WITHOUT MHD	p-value	Standardized mean difference (SMD)
Age at Index Mean ± SD	55 ± 16.9	54.7 ± 18	0.005	0.018
Female Sex	26204 (53.5)	26365 (53.9)	0.302	0.007
Race				
White	35023 (71.5)	34969 (71.4)	0.702	0.002
Black or African American	7870 (16.1)	8076 (16.5)	0.075	0.011
Unknown	5337 (10.9)	5286 (10.8)	0.600	0.003
Asian	452 (0.9)	375 (0.8)	0.007	0.017
American Indian or Alaska Native	240 (0.5)	226 (0.5)	0.516	0.004
Native Hawaiian or Other Pacific Islander	38 (0.1)	28 (0.1)	0.218	0.008
Ethnicity				
Not Hispanic or Latino	36,888 (75.3)	37,063 (71.5)	0.193	0.008
Unknown Ethnicity	8797 (17.9)	8702 (17.8)	0.428	0.005
Hispanic or Latino	3275 (6.7)	3195 (6.5)	0.303	0.007
Nicotine Dependence	8190 (16.7)	8120 (16.6)	0.548	0.004
Alcohol Dependence	5369 (10.9)	5208 (10.6)	0.097	0.011

Table 2: Measures of Association

Outcome	Cohort	Patients with outcome (% risk)	Odds Ratio (OR)	95% CI	p-value
Opioid use disorder (dependence or abuse)	CP w/ MHD	3,467 (7.1%)	4.8	4.4-5.2	< 0.0001
	CP w/o MHD	767 (1.6%)			
Opiate use (ever)	CP w/ MHD	13,846 (28.3%)	1.5	1.4-1.5	< 0.0001
	CP w/o MHD	10,310 (21.1%)			
Adverse opiate event	CP w/ MHD	592 (1.2%)	3.8	3.2-4.5	< 0.0001
	CP w/o MHD	158 (0.3%)			
Opiate overdose	CP w/ MHD	1,809 (3.7%)	4.2	3.7-4.6	< 0.0001
	CP w/o MHD	448 (0.9%)			
Long-term opiate analgesic use	CP w/ MHD	9,896 (20.2%)	2.2	2.1-2.3	< 0.0001
	CP w/o MHD	5,046 (10.3%)			
All-cause mortality	CP w/ MHD	6,958 (14.4%)	1.3	1.2-1.3	< 0.0001
	CP w/o MHD	5,702 (11.8%)			

OUTCOMES

- The two cohorts were well-matched across all covariates, with all SMDs <0.1
- In the MHD cohort, 51.6% had mood/affective disorders (F30-39), 49.5% had anxiety (F40-48), and 5.9% had non-mood psychotic (F20-29).
- At 3 years, the MHD cohort had a near 5-fold increase in the rate of **opioid use disorder** (7.1% vs 1.6%, OR 4.8, 95% CI 4.4-5.2).
- The MHD cohort also had significantly higher rates of (Table 2):
  - **Any opiate use** (OR 1.5, 95% CI 1.4-1.5)
  - **Long-term opioid use** (OR 2.2, 95% CI 2.1-2.3)
  - **Opioid overdose** (OR 4.2, 95% CI 3.7-4.6)
  - **All-cause mortality** (OR 1.3, 95% CI 1.2-1.3).

CONCLUSIONS

- In propensity-matched cohorts, patients with CP and concomitant MHDs had higher rates of opioid use disorder, long-term opiate use, overdose, and all-cause mortality compared with those without MHDs.
- As CP-related pain has been shown to be augmented in patients with MHDs– specifically depression– identifying this opioid risk is critical in the management of these patients.
- Other questions to consider going forward:
  - What other factors influence opioid use patterns in CP patients?
  - How can we mitigate these risks for this patient population while effectively managing their pain?