Opioid use in patients with NAFLD: prevalence and association with comorbidities and disease severity

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INTRODUCTION

Pain is common among patients with non alcoholic fatty liver disease (NAFLD). Opioids are often used in patients with liver disease, but use of these medications may increase risk of complications. Little is known regarding the prevalence of opioid use in patients with NAFLD. This study assessed opioid use in a real world cohort of patients with NAFLD.

METHODS

Cohort

- TARGET–NASH is an ongoing longitudinal, observational cohort of > 3,700 patients with NAFLD managed according to local practice standards at 55 academic and community sites in the United States.
- Participating clinics provided redacted medical records (structured and unstructured data) from consented patients. Patient narratives, laboratory, pathology, and imaging data were extracted and stored in a secured database. Patient reported outcome (PRO) measures were also collected on an annual basis at select sites. Patients contributed blood samples to a biospecimen repository for biomarker validation and translational research.

Analysis Cohort

This sub-cohort included 3,273 patients \geq 18 years old with a diagnosis of NAFLD enrolled in TARGET-NASH between August 1, 2016 and October 4, 2018.

Patients were stratified into: NAFLD Cirrhosis, NASH, and NAFL.

Clinical Case De	finitions of NAFLD
NAFLD Cirrhosis	History of NAFLD with: 1) Liver biopsy with fibrosis stage = 4 OR 2) Liver biopsy with fibrosis stage = 3 and \geq 1 clinical signs of 3) 2 or more clinical signs of cirrhosis OR 4) FibroScan® elastography result \geq 11 kPa
NASH	 Confirmed by biopsy: Steatohepatitis by Brunt criteria OR NAS total score ≥ 4 Clinical diagnosis: ALT > 19 U/L for adult female (22 child), > 30 U/L for adult m child) and; Hepatic steatoses on biopsy or CT/US/MRI and; I of the following: BMI ≥ 30, type 2 diabetes, dyslipidemia
NAFL	Any participant not meeting criteria for clinical NASH or cirrh

Statistical Analysis

Opioid use was defined as any use within one year prior to or at enrollment:

l year	Enrollment
3 years retrospective	

The prevalence of opioid use was estimated within severity of liver disease and within strata of baseline characteristics.

The odds of use as well as 95 % confidence intervals were estimated by patient characteristics using multivariable forward, stepwise regression.

of cirrhosis OR

male (26

rhosis

BECILITO

le 1. Descriptive character	istics of the patient	s with NAFLD		Abdominal Pain
Patient Characteristics	NAFLD Cirrhosis (N=1123) N(%)	NASH (N=1187) N(%)	NAFLD (N=963) N(%)	Back Pain
oid Status				Headache
Opioid Use	259 (23.1)	205 (17.3)	121 (12.6)	Anxiety
Non-opioid analgesic use	392 (34.9)	461 (38.8)	286 (29.7)	
No analgesic use	472 (42.0)	521 (43.9)	556 (57.7)	Depression
e at Study Entry; Mean (SD)	60.9 (9.88)	53.4 (13.94)	56.7 (13.63)	Nephrolithiasis
nder				
Male	453 (40.4)	433 (36.5)	453 (47.3)	Osteoarthritis
Not Available	1 (0.09)	_	6 (0.62)	Fibromyalgia
e				Percentage 0
White	996 (88.7)	869 (73.3)	562 (58.7)	J
Black	27 (2.4)	77 (6.5)	68 (7.1)	
Other	68 (6.1)	185 (15.6)	278 (28.9)	Figure 2. Multivariable
Not Available	32 (2.8)	52 (4.4)	55 (5.7)	
nicity				Age (≥59 vs. <59
Hispanic or Latino	142 (12.6)	148 (12.5)	107 (11.2)	NASH VS. NAFI
Not Available	33 (2.9)	46 (3.9)	51 (5.3)	Headache Diabetes
(kg/m2); Mean (SD)	34.8 (7.5)	33.5 (7.4)	31.2 (7.6)	NAFLD Cirrhosis vs. NAFI
ohol Usage				BMI (≥32 vs. <32
Never	421 (37.5)	305(25.7)	246 (25.5)	GERI
Current*	145 (12.9)	302 (25.4)	208 (21.6)	Osteoarthriti
Former	76 (6.8)	52 (4.4)	41 (4.3)	Nephrolithiasis Anxiety
Not Available	481 (42.8)	528 (44.5)	468 (48.6)	Anxiety Abdominal Pair
oking Status				Autoimmune/Rheumatologic
Never	568 (50.6)	687 (64.8)	548 (65.6)	Fibromyalgia
Current	82 (7.3)	87 (8.2)	75 (9.0)	Depression
Former	330 (29.4)	286 (24.1)	213 (22.1)	Back Pain
Not Available	143 (12.7)	127 (10.7)	127 (13.2)	

* Audit score > 7 is less than 4% across all stages of liver disease severity

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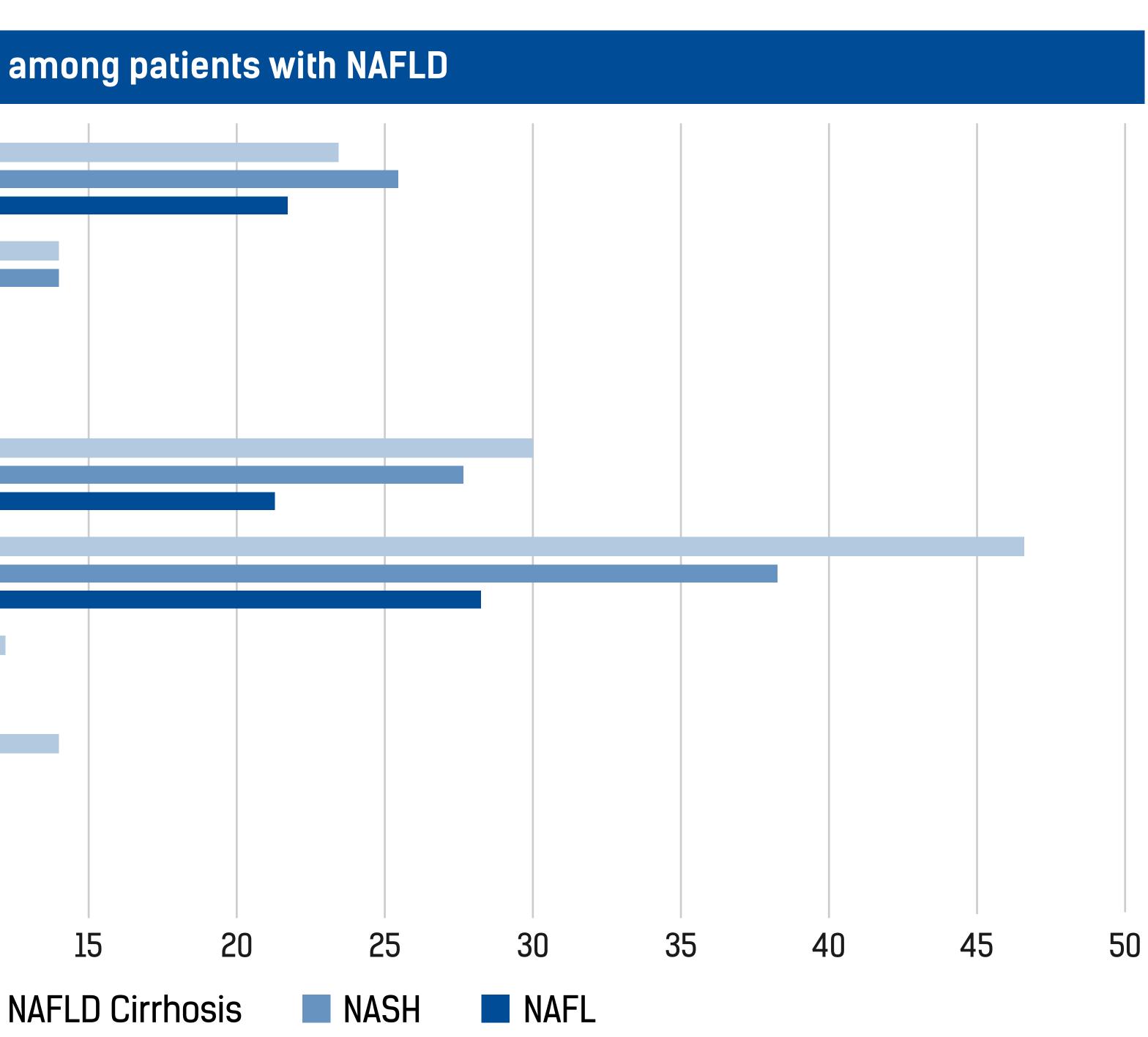
A forward, step-wise logistic regression model was fit (significance level for entry=0.25, significance level to remain in the model=0.1) with the variables considered to be associated with opioid use among patients with NAFLD.

CONCLUSIONS

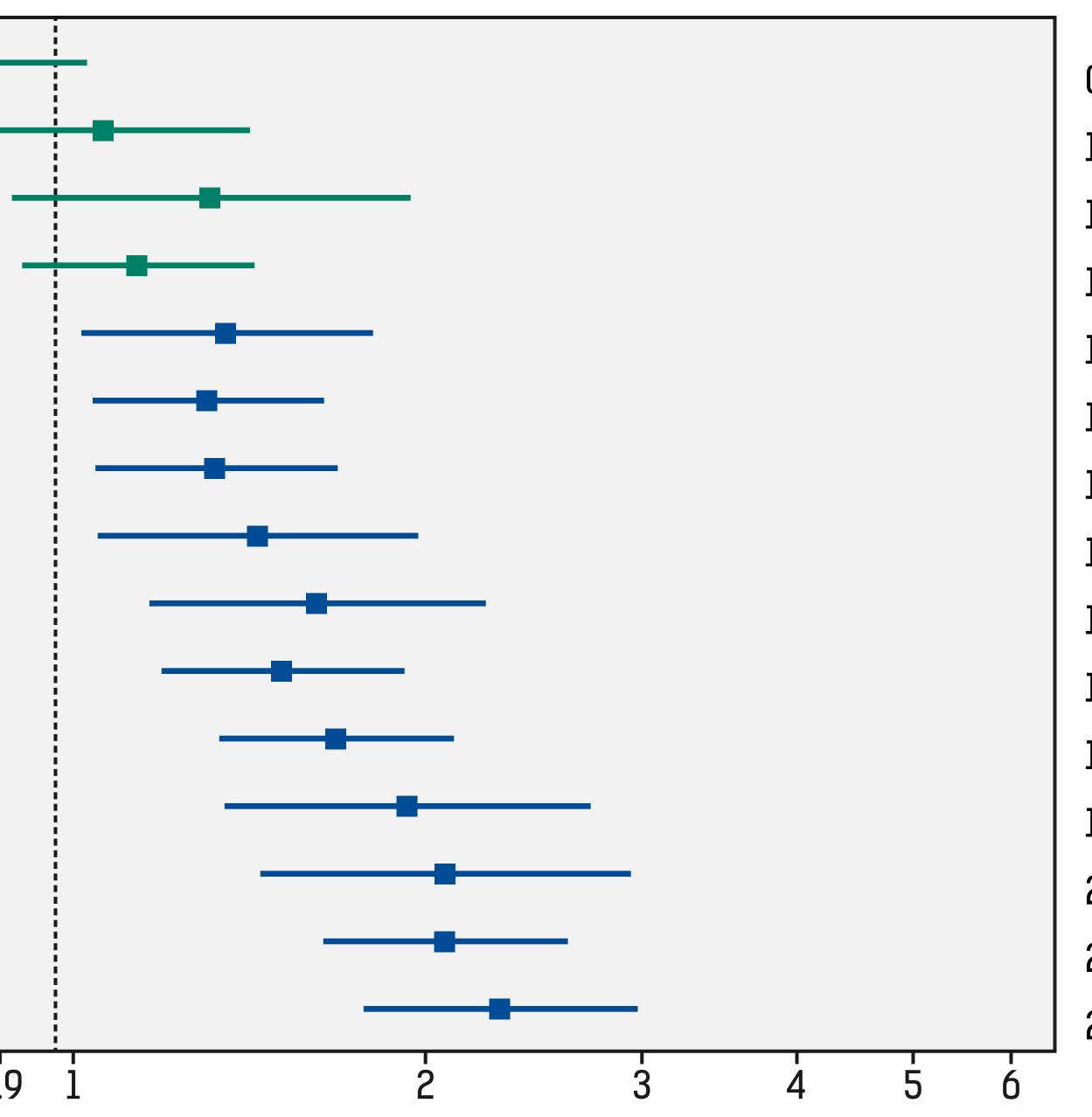








Use by Patient Characteristics among Patients with NAFLD



0.86 (0.694, 1.063) 1.1 (0.832, 1.444) 1.34 (0.917, 1.951) 1.17 (0.938, 1.455) 1.38 (1.045, 1.82) 1.33 (1.071, 1.656) 1.35 (1.074, 1.696) 1.46 (1.082, 1.978) 1.63 (1.188, 2.25) 1.53 (1.219, 1.927) 1.69 (1.358, 2.114) 1.94 (1.373, 2.731) 2.08 (1.467, 2.944) 2.08 (1.648, 2.615) 2.31 (1.782, 2.981)

Odds Ratios and 95% Confidence Intervals

• Nearly 1 of 5 of patients with NAFLD were users of opioids within one year prior to or at enrollment • More advanced liver disease, painful comorbidities and psychiatric disease were associated with opioid use • Efforts should be made to minimize unnecessary opioid use by treating comorbid psychiatric disease, maximizing safe non-opioid analgesics and pursuing non-pharmacologic pain management in patients with NAFLD