Sociodemographic and Clinical Characteristics of Patients with MASH Initiating Resmetirom

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MASH-TAG CONFERENCE 2026

Introduction

- Metabolic dysfunction-associated steatohepatitis (MASH), formerly known as NASH/NAFLD, is a progressive liver disease with limited treatment options.
- In March 2024, the FDA approved resmetirom as the first medication for treatment of MASH and fibrosis stages F2 and F3.[1]
- Resmetirom is a thyroid hormone receptor beta agonist indicated for adults with MASH and moderate to advanced liver fibrosis.[2]
- Clinical trials have shown that resmetirom improves hepatic fibrosis, resolves steatohepatitis, reduces hepatic fat and liver enzymes.[2,3]
- Understanding the characteristics of MASH patients initiating resmetirom is essential for optimizing clinical utility and informing management strategies.
- This study examines patient characteristics and prescribing patterns using a large prescription fill database.

Methods

- This retrospective cohort study used large specialty and retail pharmacies data.
- The index date was defined as the first resmetirom prescription filled for MASH from March 14, 2024 (resmetirom FDA approval date).
- Inclusion criteria: aged ≥18 years old, with at least 2 fills for resmetirom.
- Patient characteristics included age, gender, region, rural-urban residency, Social Vulnerability Index (SVI identifies communities most at risk from disasters using socioeconomic factors such as poverty, disability, age, and housing conditions), and payer type.
- Clinical characteristics included prescribing physician specialty, practice setting, geography, and academic hospital affiliation. Other clinical variables included proportion days covered (PDC) and patient Rx-Risk Comorbidity Index,[4] a burden of disease score based on patient prescription history.
- High PDC (good adherence) for resmetirom was defined as PDC ≥ 80%. Multivariable logistic regression was used to assess associations between sociodemographic and clinical characteristics and high PDC.

Results

Patient Sociodemographic Characteristics (Table 1)
- 5,389 patients were evaluated after 6 months of follow up.
- The mean age was 56.4 years, 56.8% were female.
- 75.8% of patients had a commercial health insurance.
- Patients were geographically dispersed within the South (39.5%), West (22.7%), Northeast (20.4%), and Midwest (16.8%). Patients lived in rural (43.4%), urban (33.4%), and suburban (23.0%) areas.
- The median household income was $60,918, and the mean SVI was 0.48.

Prescriber Characteristics
- Resmetirom was mainly prescribed by hepatologists and gastroenterologists (56.4%), with other specialties accounting for 40.4% of new fills.
- Physician practice places were urban (50.6%), suburban (29.1%), and rural (20.2%), and 70.5% were affiliated with an academic hospital.
- Physicians were also geographically dispersed within the South (39.3%), West (21.3%), Northeast (20.8%), and Midwest (17.9%).

Clinical Characteristics
- The proportion of patients with high PDC was 85.3%.
- Age, sex, urban-rural area, SVI, and RX-risk score were associated with high PDC (Figure 1).
- The average Rx-Risk Index score was 2.4 (SD 4.0).[4]

Conclusions

- Patients with MASH initiating resmetirom were geographically diverse, whereas early prescribers were predominantly located in urban areas associated with academic medical centers.
- Adherence levels were high in the first six months of resmetirom use, suggesting early adoption among engaged patients and provider groups.
- Patients who were older, male, living in rural areas, with lower SVI, or lower RX-risk scores were associated with high resmetirom adherence.
- Future research aimed at understanding long-term resmetirom utilization and patient clinical characteristics may support individualized and effective approaches to MASH management.

Table 1. Patient Sociodemographic Characteristics

Characteristics	Total N = 5,389	High PDC N = 4,063	Low PDC N = 1,326	P value
Age (years), mean (SD)	56.42(12.67)	57.08(12.41)	54.38(13.25)	<0.0001
Age group N (%)				<0.0001
≤44 years	930(17.26)	650(16.00)	280(21.12)	
45-64 years	2,912(54.04)	2,175(53.53)	737(55.58)	
≥65 years	1,547(28.71)	1,238(30.47)	309(23.30)	
Gender N (%)				0.0549
Female	3,060(56.78)	2,277(56.04)	783(59.05)	
Male	2,329(43.22)	1,786(43.96)	543(40.95)	
Geographic regions N (%)				0.0499
Northeast	1,098(20.37)	825(20.31)	273(20.59)	
Midwest	903(16.76)	703(17.30)	200(15.08)	
South	2,127(39.47)	1,615(39.75)	512(38.61)	
West	1,225(22.73)	890(21.90)	335(25.26)	
Missing	36(0.67)	30(0.74)	6(0.45)	
Urban-rural area N (%)				0.0006
Urban	1,801(33.42)	1,302(32.05)	499(37.63)	
Suburban	1,238(22.97)	963(23.70)	275(20.74)	
Rural	2,338(43.38)	1,789(44.03)	549(41.40)	
Missing	12(0.22)	9(0.22)	3(0.23)	
Median household income ($)				
Mean (SD)	60,918(22,191)	61,166(22,212)	60,156(22,119)	0.0678
Median (IQR)	57,226(28,619)	57,463(28,336)	56,044(29,551)	0.128
SVI				
SVI overall mean (SD)	0.48(0.23)	0.47(0.23)	0.51(0.24)	<.0001
Racial and Ethnic Minority status mean (SD)	0.52(0.26)	0.51(0.26)	0.55(0.27)	<.0001
Housing type and transportation mean (SD)	0.47(0.17)	0.47(0.17)	0.49(0.18)	<.0001
Payer type N (%)				0.0002
Commercial insurance	4,086(75.82)	3,131(77.06)	955(72.02)	
Medicare	573(10.63)	424(10.44)	149(11.24)	
Other	730(13.55)	508(12.50)	222(16.74)	

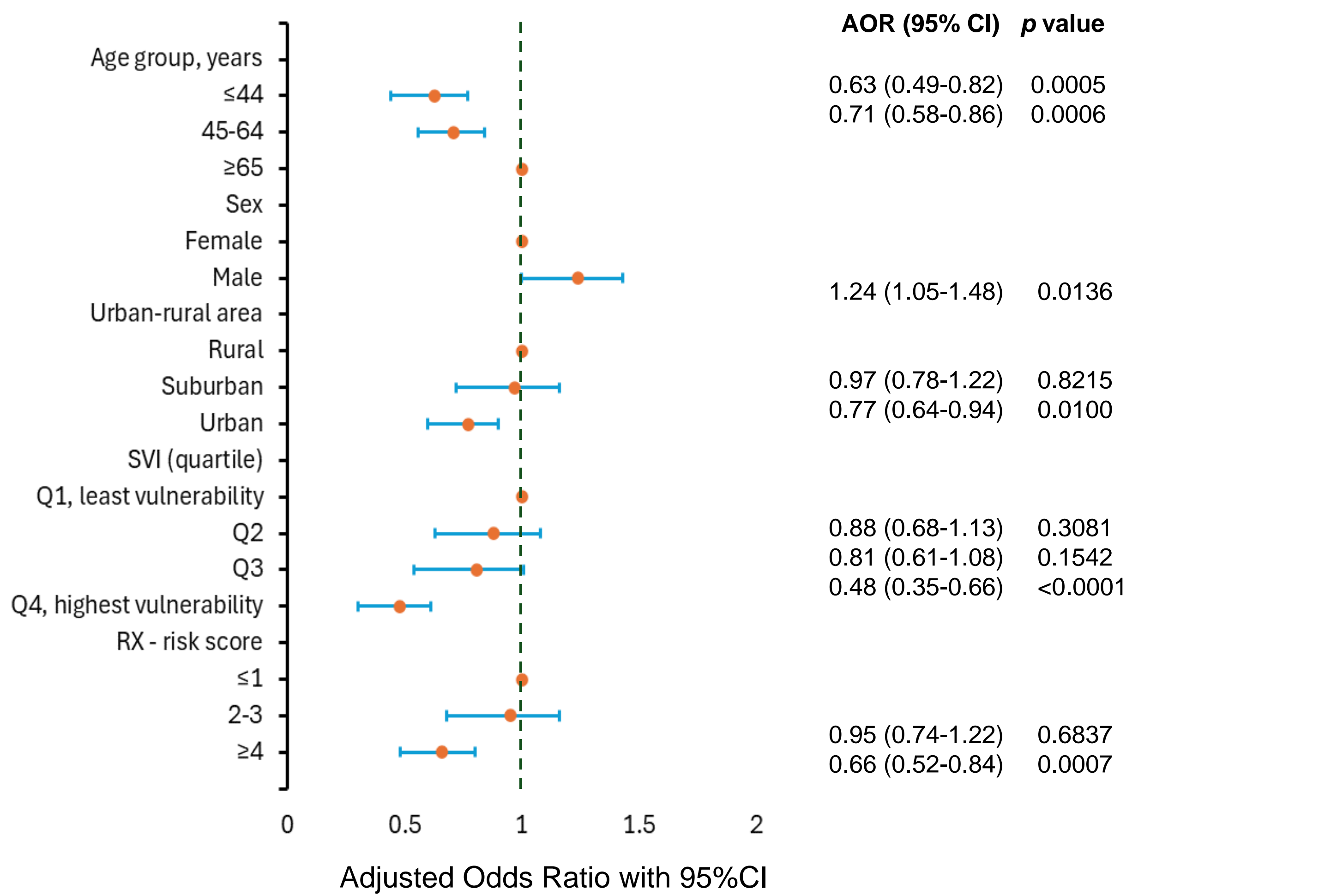**Figure 1.** Forest plot of adjusted odds ratios (AOR) of sociodemographic and clinical characteristics for good resmetirom adherence

	AOR (95% CI)	p value
Age group, years		
≤44	0.63 (0.49-0.82)	0.0005
45-64	0.71 (0.58-0.86)	0.0006
≥65		
Sex		
Female		
Male	1.24 (1.05-1.48)	0.0136
Urban-rural area		
Rural		
Suburban	0.97 (0.78-1.22)	0.8215
Urban	0.77 (0.64-0.94)	0.0100
SVI (quartile)		
Q1, least vulnerability		
Q2	0.88 (0.68-1.13)	0.3081
Q3	0.81 (0.61-1.08)	0.1542
Q4, highest vulnerability	0.48 (0.35-0.66)	<0.0001
RX - risk score		
≤1		
2-3	0.95 (0.74-1.22)	0.6837
≥4	0.66 (0.52-0.84)	0.0007

References

1. FDA approves first treatment for patients with liver scarring due to fatty liver disease. March 14, 2024. Accessed December 8, 2025. https://www.fda.gov/news-events/press-announcements/fda-approves-first-treatment-patients-liver-scarring-due-fatty-liver-disease.
2. Mazhar S, et al. Efficacy and safety of resmetirom among patients with non-alcoholic steatohepatitis: a systematic review and meta-analysis. Ann Med Surg (Lond). 2024;86(9):5447-5454.
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Funding