



# NEWSLETTER APRIL 2024

## RESEARCH PUBLICATION



### AIR POLLUTION ASSOCIATE WITH ADVANCED HEPATIC FIBROSIS AMONG PATIENTS WITH CHRONIC LIVER DISEASE

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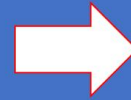
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- DOI: 10.1002/kjm2.12781



Air pollution measurement  
in a township of Southern Taiwan



If mean PM 2.5  $\geq$   
30  $\mu\text{g}/\text{m}^3$  per year



Advanced fibrosis  $\rightarrow$   
OR/CI: 2.35/1.52–3.64;  $P < 0.001$

#### Objective

We aimed to investigate the association between air pollution and advanced fibrosis among patients with metabolic associated fatty liver disease (MAFLD) and chronic hepatitis B virus (HBV) and hepatitis C virus (HCV) infections.

#### Design

A total of 1,376 participants who were seropositive for HBV surface antigen (HBsAg) or antibodies to HCV (anti-HCV) or had abnormal liver function in a community screening program from 2019 to 2021 were enrolled for the assessment of liver fibrosis using transient elastography. Daily estimates of air pollutants (particulate matter  $\leq 2.5 \mu\text{m}$  in diameter (PM<sub>2.5</sub>), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>) and benzene) were aggregated into mean estimates for the previous year based on the date of inclusion.

#### Results

Of the 1,376 participants, 767 (52.8%) and 187 (13.6%) had MAFLD and advanced fibrosis, respectively. A logistic regression analysis revealed that the factors associated with advanced liver fibrosis were HCV viremia (odds ratio [OR], 3.13; 95% confidence interval [CI], 2.05–4.77;  $P < 0.001$ ), smoking (OR, 1.79; 95% CI, 1.16–2.74;  $P = 0.01$ ), age (OR, 1.04; 95% CI, 1.02–1.05;  $P < 0.001$ ) and PM2.5 (OR, 1.10; 95% CI, 1.05–1.16;  $P < 0.001$ ). Linear regression analysis revealed that LSM was independently correlated with PM2.5 ( $\beta$ : 0.134; 95% CI: 0.025, 0.243;  $P = 0.02$ ). There was a dose-dependent relationship between different fibrotic stages and the PM2.5 level (the PM2.5 level in patients with fibrotic stages 0, 1-2 and 3-4: 27.9, 28.4, 29.3  $\mu\text{g}/\text{m}^3$ , respectively; trend  $P < 0.001$ ).

## Conclusions

Exposure to PM2.5, as well as HBV and HCV infections, is associated with advanced liver fibrosis in patients with MAFLD. There was a dose-dependent correlation between PM2.5 levels and the severity of hepatic fibrosis.

**Keywords:** MAFLD, HBV, HCV, Transient elastography; advanced liver fibrosis; air pollution; PM2.5

### WHAT IS ALREADY KNOWN ON THIS TOPIC:

- Air pollution can cause multiple diseases; however, the effects of air pollution on patients with chronic liver disease have not been thoroughly investigated.

### WHAT THIS STUDY ADDS:

- PM2.5 levels are positively correlated with advanced fibrosis not only in patients with MAFLD but also among those with chronic hepatitis.
- CHB patients with metabolically associated fatty liver disease (MAFLD) had a higher risk of advanced fibrosis than those without MAFLD.

### HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY:

- HCV associated with metabolic dysfunction and MAFLD might be a threat after HCV eradication. Therefore, it is necessary to evaluate the confounding effects of HBV or HCV infection on the severity of MAFLD.
- Further studies are required to determine the long-term outcomes of MAFLD patients in the setting of air pollution.



# NATIONAL AND GLOBAL MAFLD CONFERENCES



**APASL 2024**  
**STC on MAFLD**

*More than A Fatty Liver Disease:*  
Interplay between obesity, diabetes, cardiovascular disease, HBV, HCV and HCC

**6/28 Fri ▶ 6/30 Sun**  
Kaohsiung Exhibition Center (KEC)  
**Kaohsiung, TAIWAN**



Prof. Ming-Lung Yu  
President,  
2024 APASL STC on MAFLD



Prof. Pei-Jer Chen  
Chair of Scientific Committee,  
2024 APASL STC on MAFLD

28 Jun (FRI) 2024	
Venue	9F, Heart Reading Banquet, TAI Urban Resort
Time	Registration 12:30-16:00
13:50-13:55	
13:55-14:20	Postgraduate Course (I)
14:20-14:45	
14:45-15:10	
15:10-15:35	
15:35-15:55	Break
15:55-16:20	Postgraduate Course (II)
16:20-16:45	
16:45-17:10	
17:10-17:35	
17:35-17:40	

29 Jun (SAT) 2024			
Venue	Room 305	Room 304	
Time	Registration 07:30-16:00		
07:30-08:00			
08:00-08:25	Plenary Session (I) <i>Epidemiology</i>	Plenary Session (II) <i>Mechanisms of disease progression</i>	
08:25-08:50			
08:50-09:15			
09:15-09:40			
09:40-10:00	Break		
10:00-10:25	Plenary Session (III) <i>Diagnosis</i>	Plenary Session (IV) <i>Metabolic characteristics for MAFLD development</i>	
10:25-10:50			
10:50-11:15			
11:15-11:40			
11:40-12:00	Opening Ceremony		
12:00-12:30	Keynote Lecture (I)		
12:30-13:30	Luncheon Symposium (I) Gilead	Luncheon Symposium (II) Roche	
13:30-13:55	Plenary Session (V) <i>Update of HBV treatment</i>	Plenary Session (VI) <i>HCV treatment and long term outcomes</i>	
13:55-14:20			
14:20-14:45			
14:45-15:10			
15:10-15:30	Break		
15:30-16:00	Keynote Lecture (II)		
16:00-16:30	State-of-Art Lecture		
16:30-17:00	Chairman Lecture		
17:00-18:00	Evening Symposium (III) BMS	Evening Symposium (IV) Gilead [304A]	Evening Symposium (V) Novo Nordisk [304B]

30 Jun (SUN) 2024		
Venue	Room 305	Room 304
Time	Registration 07:00-16:00	
07:30-08:30	Oral Presentation	Young Investigator Award Presentation
08:30-08:55	Plenary Session (VII) <i>Therapeutic targets and clinical trials</i>	Basic and Translational Workshop
08:55-09:20		
09:20-09:45		
09:45-10:10		
10:10-10:30	Break	
10:30-10:55	Plenary Session (VIII) <i>Novel therapy and management of obesity</i>	Basic and Translational Workshop
10:55-11:20		
11:20-11:45		
11:45-12:10		
12:10-13:10	Luncheon Symposium (VI) Novo Nordisk	Luncheon Symposium (VII) Abbvie
13:10-13:30	Plenary Session (IX) <i>Cross-talk between diabetologist and hepatologist</i>	Plenary Session (X) <i>Cross-talk between cardiologist and hepatologist</i>
13:30-13:50		
13:50-14:10		
14:10-14:30		
14:30-14:50		
14:50-15:10	Break	
15:10-15:35	Plenary Session (XI) <i>Current management and systemic therapies for HCC</i>	Plenary Session (XII) <i>Policy review for MAFLD</i>
15:35-16:00		
16:00-16:25		
16:25-16:50		
16:50-17:10	Closing Ceremony	

Welcome you to attend the APASL Single Topic Conference on Metabolic Associated Fatty Liver Disease (MAFLD) in the beautiful city of Kaohsiung, Taiwan, on June 28 – 30, 2024.

Visit <https://www.apaslstc2024kaohsiung.org/> for updated information and **REGISTRATION**.