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## 1. BACKGROUND

- The global age-adjusted standardized incidence and prevalence rates of peptic ulcer disease (PUD) have declined over the last few decades.
- Nonetheless, studies have reported higher rates of PUD and its complications in patients with chronic liver disease.
- However, there continues to be a significant paucity of data on the impact of non-alcoholic fatty liver disease (NAFLD) in patients with PUD. In this study, we aimed to determine the influence of NAFLD on PUD hospitalizations in the United States (US).

## 2. METHODS

- This retrospective study utilized the National Inpatient Sample to identify all NAFLD hospitalizations with PUD in the US from 2009 to 2019. Trends of hospitalization characteristics and clinical outcomes were highlighted. P-values  $\leq 0.05$  were considered statistically significant.

## 3. RESULTS

- Between 2009–2019, there were 50,769 and 4,624,628 PUD hospitalizations with and without NAFLD, respectively.
- PUD hospitalizations with NAFLD had a lower **mean age** (58.6 vs 65.3%,  $p < 0.001$ ) compared to non-NAFLD PUD hospitalizations.
- Racial differences** were evident as we noted a higher proportion of Whites (72 vs 70%,  $p < 0.001$ ) and Hispanics (13 vs 9%,  $p < 0.001$ ) for PUD hospitalizations with NAFLD compared to the non-NAFLD PUD cohort (Figure 1).

Variable	PUD with NAFLD	PUD without NAFLD	P-value
Total hospitalizations	50,769	4,624,628	
Mean Age (years)	58.6	65.3	<0.001
Gender (male)	42%	49%	<0.001
CCI $\geq$ 3	55%	49%	<0.001
Upper Endoscopy	49%	41%	<0.001
Inpatient Mortality	2%	3%	0.0004
Mean Length of stay (LOS) (days)	5.8	6.2	<0.001
Mean Total Hospital Charges (THC) (\$)	58,970	63,500	<0.001

Table 1: Comparative analysis of hospitalization characteristics and clinical outcomes between peptic ulcer disease (PUD) hospitalizations with and without non-alcoholic fatty liver disease (NAFLD) in the United States between 2009-2019.

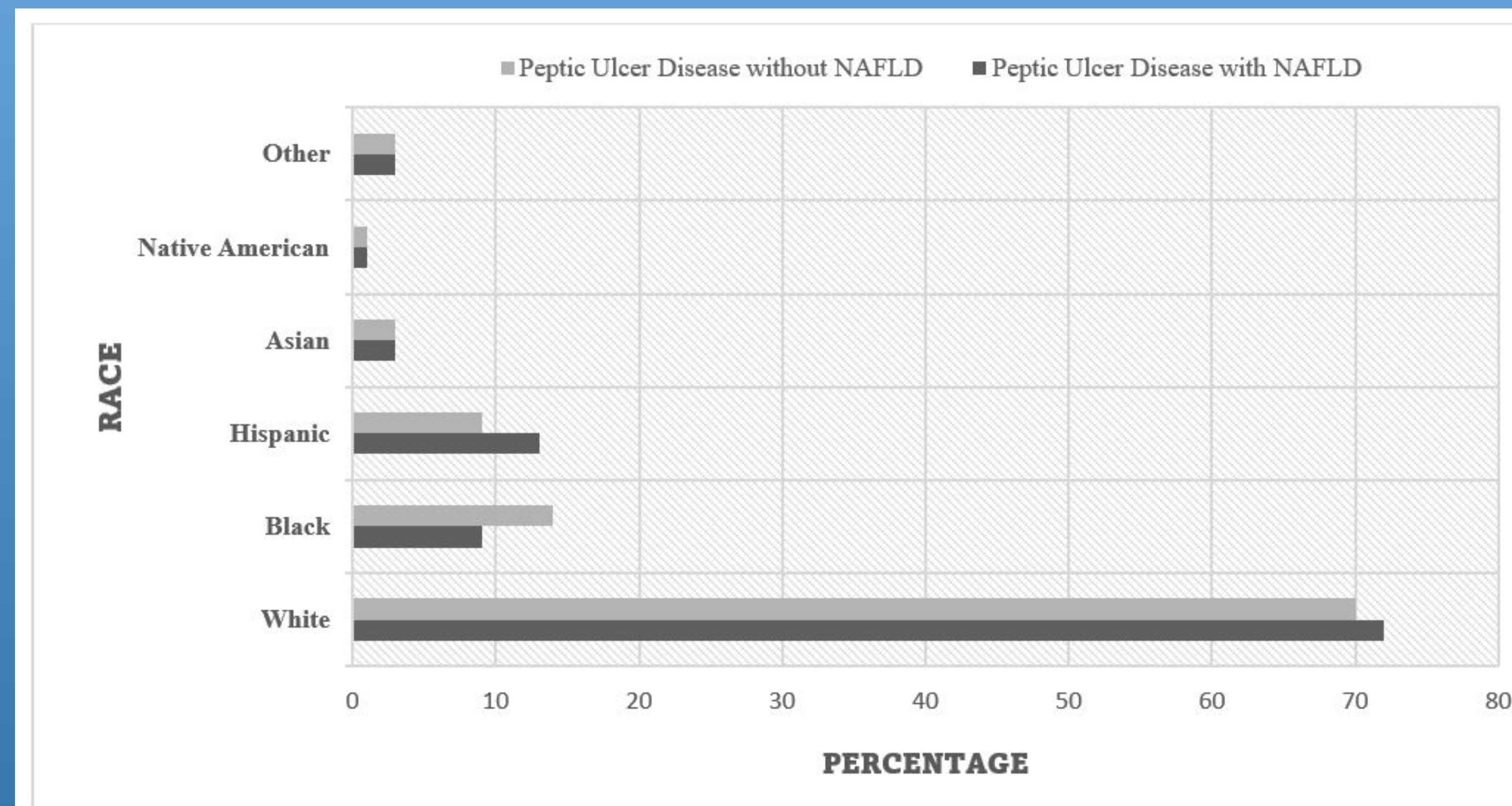


Figure 1: Comparative analysis of racial distribution for peptic ulcer disease (PUD) with and without non-alcoholic fatty liver disease (NAFLD) in the United States from 2009-2019.

Higher upper endoscopy rates in PUD with NAFLD hospitalizations compared to non-NAFLD

Reduced inpatient mortality, LOS, THC for NAFLD hospitalizations compared to non-NAFLD

- PUD hospitalizations with NAFLD had a higher proportion of patients with **Charlson Comorbidity Index (CCI)  $\geq$ 3** (55 vs 49%,  $p < 0.001$ ) compared to non-NAFLD PUD hospitalizations.
- Although we did not find a statistical difference in the rates of bleeding PUD and *H. pylori* infection between the two groups, PUD hospitalizations with NAFLD had higher **upper endoscopy utilization** (49 vs 41%,  $p < 0.001$ ) compared to the non-NAFLD PUD cohort.
- PUD hospitalizations without NAFLD had a higher proportion of patients with **peptic ulcer perforation** (5 vs 3%,  $p < 0.001$ ) compared to the NAFLD cohort.
- Lower **inpatient mortality** (2 vs 3%,  $p = 0.0004$ ), mean **length of stay [LOS]** (5.8 vs 6.2 days,  $p < 0.001$ ), and mean **total healthcare charge [THC]** (\$58,970 and \$63,500,  $p < 0.001$ ) for PUD hospitalizations with NAFLD compared to those without NAFLD.

## 4. CONCLUSION

- Despite a higher proportion of patients with CCI $\geq$ 3, PUD hospitalizations with NAFLD had lower inpatient mortality, mean LOS, and mean THC compared to the non-NAFLD PUD cohort.
- However, we noted increased utilization of upper endoscopy for PUD hospitalizations with NAFLD.
- Additional studies are needed to fully understand the impact of NAFLD on PUD populations.

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