

Latin Americans with greater Native American ancestry may be more susceptible to liver failure

June 15 2023



Genetic ancestry, race, and severity of acutely decompensated cirrhosis in Latin America



FACTORS ASSOCIATED WITH ACLF

- Native American ancestry and race vs. European ancestry and European American race
- Heart failure
- Episodes of decompensated cirrhosis
- Ascites
- Inflammatory disorders
- Admission to public hospital

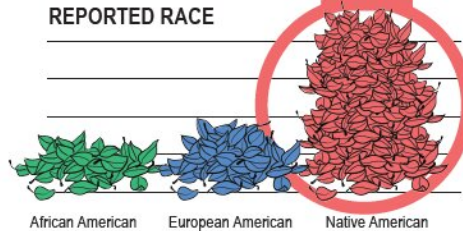


RISK OF SHORT-TERM MORTALITY

- Increasing age
- Inflammatory disorders
- Markers of organ failure
- Admission to public hospital

2.57 TIMES
THE ODDS OF SEVERE ACLF IN EUROPEAN AMERICANS

REPORTED RACE



ATTENTION

- Native Americans should be included in surveillance programs to benefit from urgent treatment
- Native Americans should be prioritized for liver transplantation

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EF CLIF infographic showing results of the ACLARA study in Latin America. Credit: EF CLIF

Differences in the percentage of Native American ancestry in Latin American people are linked with the chances of them developing severe liver failure and associated high risk of short-term mortality, a study co-authored by UCL has found.

The ACLARA study, published in *Gastroenterology*, is the first of its kind to indicate that ancestry and race may determine the outcome of advanced [liver disease](#) (decompensated cirrhosis) in patients.

The large prospective observational study, co-authored by Professor Rajiv Jalan (UCL Division of Medicine), found a high prevalence of severe acute-on-chronic liver failure (ACLF) and high risk of 28-day mortality in liver disease patients that had a greater percentage of Native American ancestry and reported race than those of European and African descent.

The study also found socio-[economic factors](#) are associated with the probability of developing ACLF in the Latin American population, with those able to afford private treatment less likely to develop the condition.

Co-author Professor Rajiv Jalan (UCL Division of Medicine) said, "The data generated in the ACLARA study provides the first indication for the important association of Native American race and ancestry in the development of liver failure and its associated mortality."

"It appears that the mechanism of this susceptibility is markedly higher systemic inflammation, which is a central operative mechanism of liver failure. These data have implications for initiating more intense screening programs for liver disease in this population and further research to understand their susceptibility to other diseases and the mechanisms underlying increased inflammation."

According to a recent study, liver disease accounts for more than two million deaths annually (cirrhosis, viral hepatitis, and liver cancer) and for 4% of all deaths worldwide (one out of every 25 deaths). One in three liver-related deaths occurs among females.

Liver cirrhosis mortality in Mexico was the highest in Latin America in 2010, with a mortality rate of 38.3 per 100,000.

A previous large study in Europe, CANONIC, identified ACLF as a distinct syndrome that develops in 30% of patients with acute decompensation of cirrhosis.

Clinical features of ACLF are failure of multiple organs including the liver, kidneys, brain, heart, lungs, blood clotting and a high risk of infection. Recovery from ACLF, either using intensive care or [liver](#) transplantation, can normalize the function of these organs.

To gain further insight into the relationship between [genetic ancestry](#), race and the probability of developing ACLF and associated risk of short-term mortality, researchers studied hospitalized cirrhosis patients from seven countries across Latin America.

Latin American populations have varying percentages of genetic variants of Native American, African and European ancestry, as a result of a long history of modern human migrations and admixture (genetic exchange among people of different descent).

The ACLARA study was carried out in 1,274 patients non-electively hospitalized for acute decompensation of cirrhosis in 44 university hospitals, from 27 cities across Argentina, Brazil, Chile, Colombia, Mexico, Paraguay, and Peru.

The study group reported ACLF of any grade in 31.0% of patients at

enrollment. Of these, 54.2% presented with ACLF grade 1, 24.9% had ACLF grade 2, and 20.9% had ACLF grade 3 (meaning three or more organ failures).

In addition to genetic ancestry, race was assessed by the physician at hospital admission. Researchers assessed genetic ancestry with the use of genetic markers of ancestry, and not by parental indicators of ancestry.

Overall, patients admitted to hospital with ACLF showed a higher percentage of Native American ancestry and a lower percentage of European ancestry compared to patients with acute decompensation of cirrhosis without ACLF (22.6% and 53.4% vs. 12.9% and 59.6%, respectively).

The percentage of African [ancestry](#) was low in both hospitalized patients with ACLF and patients without ACLF among participating countries (6.9% vs. 6.5%).

First author Alberto Farias (Principal Investigator, Hospital das Clínicas, University of São Paulo School of Medicine, Brazil) said, "Investigating ACLF in other cohorts may strengthen the understanding of other upstream factors on disease expression. The Latin American region, with different racial and genetic ancestries, is a unique landscape for in-depth assessment of such factors."

More information: Alberto Queiroz Farias et al, Genetic Ancestry, Race, and Severity of Acutely Decompensated Cirrhosis in Latin America, *Gastroenterology* (2023). [DOI: 10.1053/j.gastro.2023.05.033](https://doi.org/10.1053/j.gastro.2023.05.033)

Provided by University College London

Citation: Latin Americans with greater Native American ancestry may be more susceptible to liver failure (2023, June 15) retrieved 2 May 2024 from <https://medicalxpress.com/news/2023-06-latin-americans-greater-native-american.html>

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