

# Blacks twice as susceptible and more likely to die of severe sepsis than whites

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Blacks have almost double the rate of severe sepsis—an overwhelming infection of the bloodstream accompanied by acute organ dysfunction—as whites, according to recent research.

“The difference in incidence was evident by age 20 and continued throughout the adult lifespan. After accounting for differences in poverty and geography, black race remained independently associated with higher severe sepsis incidence,” wrote lead authors Amber E. Barnato, M.D., M.P.H., M.S., of the Center for Research on Health Care at the University of Pittsburgh, and Sherri L. Alexander, Ph.D., of Genentech. Hispanics, on the other hand, have a lower incidence of severe sepsis than whites.

What is more, blacks die more frequently of severe sepsis than either whites or Hispanics.

The findings appear in the first issue for February of the *American Journal of Respiratory and Critical Care Medicine*, published by the American Thoracic Society.

Dr. Barnato and colleagues conducted a retrospective population-based analysis of race-specific incidence and ICU case fatality rates for hospital-based infection and severe sepsis in Florida, Massachusetts, New Jersey, New York, Virginia and Texas. They obtained demographic and socioeconomic data from the 2000 U.S. census and clinical data for hospitalized severe sepsis cases from the hospitals' discharge data. They

compared incidence of severe sepsis, ICU admission and ICU case fatality among races, controlling for age and gender. The total analysis included more than 71 million people.

“Blacks do indeed have a higher rate of severe sepsis—almost double that of whites,” wrote Dr. Barnato. “Some, but not all of this increase was explained by blacks’ more frequent residence in ZIP codes with higher poverty rates, suggesting that social, rather than biological determinants, such as health behavior and access to primary care, may contribute to this disparity,” Dr. Barnato continued. “In contrast, Hispanic ethnicity appeared protective, conditional on similar regional urbanicity and poverty.”

The investigators considered several possible explanations for their results, including racial variation in susceptibility to particular types of infections or organ dysfunction, and overall health at baseline.

“However, the severe sepsis syndrome characteristics were not markedly different among the groups with respect to the site of infection, microbiologic etiology and both the number and type of organ dysfunction,” wrote Dr. Barnato. Furthermore, “the burden of chronic conditions among severe sepsis cases did not differ substantially across racial groups.”

One factor that clearly differed among groups was the type of hospital facilities in which patients received care.

Blacks were more likely to be treated at hospitals with poorer outcomes for severe sepsis than whites. “If a black and white patient with the same clinical characteristics were treated at the same hospital, they would have identical case survival rates,” said Dr. Barnato. “Therefore,” she continued, “it may be that the hospitals that treat most black patients see black and white patients who are sicker than we can measure using these data sources, and/or that these hospitals are providing lower quality

care.”

The study could not rule out unmeasured underlying differences such as behavior, pharmaceutical use, healthcare resources and within-hospital variations in treatment by race that may have contributed to the differences in case fatality observed, nor could they dismiss the possibility of a biological basis for racial disparities in susceptibility and outcome of severe sepsis, which could have “potentially important implications for treating sepsis.”

Despite possible explanations for the racial disparities that could not be ruled out, Dr. Barnato points out that “the overall mortality disparity among blacks could be partially ameliorated by focused interventions to improve processes and outcomes of care at the hospitals that are disproportionately black.”

Source: American Thoracic Society

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