OBJECTIVE: Sepsis, the syndrome of microbial infection complicated by systemic inflammation, is associated with significant morbidity and mortality. To determine if obesity increases risk of sepsis events.

DESIGN AND METHODS: Data from the 30,239 subject population-based longitudinal cohort study REasons for Geographic and Racial Differences in Stroke (REGARDS) were used. Using measurements at the start of the study, we defined obesity using body mass index (BMI; \(< 18.5 \text{ kg/m}^2 = \text{underweight}, 18.5-24.9 = \text{normal}, 25.0-29.9 = \text{overweight}, 30.0-39.9 = \text{obese}, \geq 40 = \text{morbidly obese}\) and waist circumference (WC; [male \(\leq 102\) cm or female \(\leq 88\) cm] = normal, [male >102 cm or female >88 cm] = obese). Over an 8-year observation period, we evaluated the association between obesity and subsequent sepsis events, adjusting for sociodemographic factors, health behaviors, chronic medical conditions, statin use, and high-sensitivity C-reactive protein.

RESULTS: There were 975 incident sepsis events. Compared to those with a BMI of 18.5-24.9, sepsis risk was higher only for BMI \(\geq 40\) (hazard ratio [HR] 1.57, [1.16-2.14]). Risk of sepsis was associated with increased WC (HR 1.34 [1.14-1.56]). In a model with both BMI and WC, sepsis risk was associated with increased WC (HR 1.47 [1.20-1.79]) but not BMI.

CONCLUSIONS: Obesity is independently associated with future sepsis events. WC is a better predictor of future sepsis risk than BMI.
Grant List

R01 NR012726 / NR / NINR NIH HHS / United States
R01-NR012726 / NR / NINR NIH HHS / United States
U01- NS041588 / NS / NINDS NIH HHS / United States
UL1-RR025777 / RR / NCRR NIH HHS / United States