

Stroke in American Indians and Alaska Natives: A Systematic Review

The following is a synopsis of “Stroke in American Indians and Alaska Natives: A Systematic Review,” published in August 2015 in the *American Journal of Public Health*.



What is already known about this topic?

Compared to other ethnic groups in the United States, American Indians and Alaskan Natives (AI/ANs) are disproportionately affected by socioeconomic and health disparities. AI/ANs have among the highest rates of obesity, diabetes, alcohol abuse, cigarette smoking and poverty, as well as the second lowest rate of education attainment.

Furthermore, AI/ANs have approximately 50% higher all-cause mortality compared to non-Hispanic whites and a shorter life expectancy. Recent studies suggest that AI/ANs have the highest or the second highest prevalence of risk factors for cerebrovascular disease, compared to all other race and ethnic groups. However, current literature on AI/AN stroke is paradoxical: research suggests low stroke mortality among AI/ANs despite research that shows a high prevalence of stroke risk factors among the group. More reliable and accurate data are needed on the prevalence, incidence, mortality, and outcomes of stroke in the AI/ANs population to inform public health priorities and interventions.

What is added by this article?

In July 2014, the authors searched PubMed using a combination of the keywords “Indians; North Americans; Inuit; cerebrovascular disorders; and stroke” to identify candidate articles for their systematic review on AI/AN stroke. Articles were selected if they used U.S. samples, were about stroke, contained population-level data on AI/ANs, were not limited to clinical prognostics, and contained data or discussion relevant to stroke epidemiology in AI/ANs. Additional articles were found by searching the bibliographies of the selected articles, resulting in a total of 57 articles. The systematic review found that AI/ANs have stroke risk factors that are similar to those found in other U.S. populations, with hypertension as the most cited. However, the prevalence of stroke risk factors in AI/ANs is among the highest of all racial and ethnic groups in the United States. The prevalence of stroke among AI/ANs was significantly higher compared to the prevalence among blacks, whites, Hispanics and Asians.

Stroke mortality rates among AI/ANs were extremely high and the stroke mortality rate at younger ages was higher among AI/ANs compared to other groups. Research that indicated a low stroke mortality rate among AI/ANs did not account for racial misclassification, which the systematic review identified as a major contributor to inaccurate mortality data. AI/AN stroke mortality rates vary regionally, with the lowest rates found in the Southwest and the highest rates in Tennessee, Alaska, and South Dakota. The review revealed a lack of research concerning post-stroke outcomes in AI/ANs. The few studies about post-stroke outcomes showed a higher case fatality rate among AI/ANs compared to whites and blacks. Another study suggests that delays in seeking therapy for acute stroke caused by barriers to care may contribute to the higher case fatality rate.

What are the implications of these findings?

This systematic review suggests a need for research on stroke in the AI/AN population to fill gaps in the existing data. More large-scale, longitudinal studies are needed to collect adequate data on stroke incidence and mortality. National surveillance efforts must oversample AI/ANs to produce a study population large enough to adjust for confounding misclassification, geographic heterogeneity, and high all-cause mortality. Additionally, efforts need to be made to ensure appropriate race classification and public health officials should design and promote culturally appropriate interventions to address stroke risk factors in AI/AN communities.

The focus of AI/AN stroke research needs to shift to address urban AI/ANs and AI/AN stroke survivors. Most community-based research focuses on rural reservation residents. However, U.S. Census data shows that the majority of AI/ANs live in urban or suburban areas.

There is little data about the communities or geographic regions with the largest concentrations of AI/AN stroke survivors and what their needs are regarding specialty healthcare or activities of daily living. Research needs to focus on AI/AN stroke survivors to help assess the number and the needs of the AI/AN stroke survivor population, which is likely to grow in the next decades.

There are two limitations to this review. First, the algorithm that was used to select articles was neither sensitive nor specific. The PubMed search missed articles that were relevant to AI/AN stroke epidemiology and included many that were not. Including articles that were found by searching the bibliographies of selected articles compensated for articles that were missed in the PubMed search. Second, the systematic review lacked meta-analysis of the findings because the authors chose to not perform meta-analysis due to large gaps in the data.

Resources

Centers for Disease Control and Prevention
Stroke Facts
<http://www.cdc.gov/stroke/facts.htm>

Centers for Disease Control and Prevention
Atlas of Heart Disease and Stroke Among American Indians and Alaskan Natives
http://www.cdc.gov/dhdsp/atlas/aian_atlas/index.htm

Centers for Disease Control and Prevention
Minority Health
<http://www.cdc.gov/minorityhealth/resources.html>

Citation

Harris, R, Nelson, LA, Muller, C, Buchwald, D. Stroke in American Indians and Alaska Natives: A Systematic Review. American Journal of Public Health: 2015;105(8)e16-e26.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.