

Dynamics of Peripheral Artery Disease and Influencing Factors in the United States and the World (1999-2020)

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Introduction: This research explores the evolving epidemiology of Peripheral Artery Disease (PAD) from 1990 to 2019, analyzing trends in global incidence, prevalence, disability-adjusted life years (DALYs), and their variations in the United States (US) and across different socio-demographic contexts. This study provides a comprehensive analysis of PAD's impact on public health, utilizing the Global Burden of Disease (GBD) framework.

Objectives: Our research advances existing knowledge by headlining the unique pattern of PAD trends, as well as emphasizing the higher burden of PAD in high-income countries. Additionally, this study indicates PAD's growing impact on health, irrespective of socio-demographic context, as all countries, regardless of Socio-Demographic Indexes (SDI) status, experience increases in DALYs.

Methods: Data on peripheral artery disease mortality, incidence, prevalence, and DALYs from 1990 to 2019 were sourced from the Global Health Data Exchange (GHDx) database. The Joinpoint Regression Program was used to compute annual percent changes (APC) and overall average annual percent change (AAPC) over the given time period. Confidence intervals for APC were determined using the Grid Search Method with permutation and parametric tests. Identification of significant differences in AAPC trends among groups was conducted through parallel pairwise comparison tests.

Results: Our findings reveal significant upward trends in worldwide PAD prevalence, incidence, and DALYs, paralleling a growing global burden of the disease over this period. In the US, analysis reveals an increase in DALYs, paired with a decrease in both incidence and prevalence. Overall, the US exhibits higher rates of all measured variables attributed to PAD compared to the global population.

Conclusion: Overall, our study enhances the understanding of PAD's epidemiology by contextualizing global and national trends of PAD between 1999 and 2019. By providing a holistic assessment of PAD's advancing burden, this research emphasizes the need for further intervention to address the widespread challenge posed by PAD.