

Comparative Analysis of Ischemic Heart Disease Burden Between Pre- and Post-menopausal Women in China, with Projections to 2041: Insights from the GBD 2021

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Abstract

Background: Ischemic heart disease (IHD) remains the leading cause of cardiovascular morbidity and mortality among women in China. However, the burden and trends of IHD by menopausal status in China remain unclear. **Methods:** This study defined the age range for premenopausal status as 15-49 years, while postmenopausal status as over 50 years. We estimated the age-standardized incidence (ASIR), prevalence (ASPR), DALYs (ASDALYR) and death rates (ASDR) of IHD, in pre- and post-menopausal women from 1990–2021, utilizing data from the 2021 Global Burden of Disease (GBD) Study. The average annual percent change (AAPC) for ASIR, ASPR, ASDALYR or ASDR were calculated to quantify the temporal trends of IHD burden. The Nordpred age-period-cohort model was used to predict the trends in incidence, prevalence, DALYs and death for pre- and post-menopausal IHD during 2022-2041. **Results:** In 2021, 6.6% of female IHD cases in China occurred in premenopausal women. Between 1990 and 2021, the ASIR and ASPR of IHD in premenopausal women increased by 24.03% (from 51.6 to 64.0 per 100,000 population) and 16.79% (from 409.0 to 477.7 per 100,000 population), respectively. Conversely, the ASDALYR and ASDR of IHD in premenopausal women decreased by 48.83% (from 423.3 to 216.6 per 100,000 population) and 49.39% (from 8.3 to 4.2 per 100,000 population), respectively. Among postmenopausal women, the ASIR, ASPR, and ASDR of IHD increased by 15.47% (from 1176.6 to 1358.6 per 100,000 population, AAPC: 0.46 [95% CI: 0.39–0.53]), 22.37% (from 9318.3 to 11403.2 per 100,000 population, AAPC: 0.64 [95% CI: 0.61–0.68]), and 4.67%, respectively, from 1990 to 2021. In contrast, the ASDALYR of IHD decreased by 7.1%. Projections to 2041 indicate that ASIR and ASPR of IHD in both pre- and postmenopausal women are expected to remain stable. However, the ASDALYR and ASDR are projected to decline. The IHD incidence, prevalence, DALYs, and death numbers in premenopausal women are expected to decrease by 23.0%, 20.6%, 44.7%, and 43.9%, respectively, over the next 20 years. In contrast, the IHD incidence, prevalence, DALYs, and death numbers in postmenopausal women are projected to increase by 85.9%, 81.6%, 59.1%, and 85.8%, respectively, over the same period. **Conclusions:** IHD continues to be a significant public health concern in China based on menopausal status. These trends underscore the urgent need for targeted prevention and management strategies, particularly for postmenopausal women, to mitigate the growing impact of IHD in China.

Keywords

Premenopausal Women, Postmenopausal Women, Global Burden of Disease, Ischemic Heart Disease