With Unsafe Sex and Smoking Cervical Cancer have Association

A recent paper examines worldwide trajectories of cervical cancer mortality and disability-adjusted life years (DALYs), together with age-specific incidence patterns, and projects future mortality attributable to unsafe sex and smoking.

The authors also considered the risk attributable to unsafe sex and smoking over the period 1990 to 2034. Notably, the paper defines unsafe sex as "the risk of disease due to sexual transmission", using a broad Global Burden of Disease (GBD) definition that encompasses multiple sexual and structural risk contexts, while acknowledging its limitations.

Cervical cancer is the fourth most common cancer in women and remains a leading cause of cancer death where access to vaccination and screening is limited. Its origin is traced mostly to persistent infection with high-risk sexually acquired human papillomavirus (HPV), with smoking acting as an important modifiable co-factor that increases cancer risk. This knowledge has led to the development of effective preventive and treatment interventions.

Study

The authors used data from the Global Burden of Disease 2019 study. This was analyzed using a variety of tools including quantile regression, restricted cubic spline, and Nordpred models, to elicit associations between the age-standardized mortality rates (ASMR) from cervical cancer, age-standardized disability-adjusted life years (ASDR) and sociodemographic index (SDI). The study also sought to estimate future trends.

Quantile regression shows the effects of SDI on mortality or ASDR at the extremes of cervical cancer burden by relating it to each part of the curve. The restricted cubic spline also provides a more nuanced understanding of the differential effects of the SDI on cervical cancer outcomes.

The Nordpred model predicts cervical cancer outcomes more robustly by age, time, and birth cohort, thus helping to shape long-term screening and prevention strategies.

Findings

The study reveals that the ASMR remains disproportionately higher in low-SDI areas, probably due to inequitable access to prevention programs.

Cervical cancer disease burden is primarily due to the years of life lost. Disability-adjusted life years (DALYs), which combine years of life lost due to premature death and years lived with disability, are therefore dominated by mortality rather than disability. Global cancer ASMR

declined modestly over the period 1990 to 2019 by approximately 0.93% per year, from 8.48 per 100,000 to 6.5 per 100,000 people. The ASDR also decreased by 0.95% per year.

Conversely, total deaths increased by 52%, from 184,527 in 1990 to 280,479 in 2019. Disability-adjusted life years also increased by 45%.

Despite the overall decline in ASMR, the study demonstrates that unsafe sex accounts for many more cases compared to smoking. In low-SDI regions in 2019, the risk from unsafe sex stood at 15.05 per 100,000, vs 0.95 per 100,000 from smoking.

Smoking-attributable ASMR reductions by 48% occurred in high-SDI countries, to 0.75 per 100,000. Smoking-related cervical cancer peaks in low-middle-SDI regions, indicating that smoking among women first increases and then drops with further development.

The risk attributable to unsafe sex decreased most significantly in absolute terms in low-SDI countries, declining from 19.18 per 100,000 in 1990 to 15.05 per 100,000 in 2019. However, the burden of disease related to unsafe sex remains greatest in low-SDI countries due to the multiple impacts of poor socioeconomic status.

Notably, smoking may worsen the risk of cancer due to HPV infection by its immunosuppressive effects, but this interaction cannot be formally tested in population-level ecological analyses and requires individual-level epidemiological studies.

Age-specific mortality from cervical cancer attributable to unsafe sex is highest in the age group above 95 years in low-SDI regions, rising from 74.04 per 100,000 in 1990 to 89.00 per 100,000 in 2019.

This highlights the need for further advancements in the treatment and palliative care of these patients in underserved areas.

Age-specific incidence also declined in most age groups, but peaked between 55 and 59 years, underscoring the need for targeted screening and prevention in this age group.

Analyses of the SDI–burden relationship indicate that regions with higher baseline cervical cancer burden experience steeper declines in mortality as SDI increases.

By 2034, the study predicts further decreases in global ASMR from cervical cancer linked to unsafe sex and smoking. However, the opposite trend is likely to occur in certain places, such as India, China, and Russia.

The authors emphasize that these projections do not explicitly account for future changes in HPV vaccination, screening programs, or HIV burden.

Conclusion

The study demonstrates a progressively declining cervical cancer burden in age-standardized mortality and DALY rates, despite rising absolute numbers of deaths.

Focused and age-specific programs are necessary to target cervical cancer mortality linked to unsafe sex and smoking, especially in deprived regions. These include HPV vaccination,

screening, and smoking cessation programs. An overall improvement in regional development is associated with better outcomes in cervical cancer.

Source:

https://www.news-medical.net/news/20260115/Cervical-cancer-association-with-unsafe-sex-and-smoking.aspx