Cervical cancer incidence: relationship with neighbourhood income differs by cell type

A recent study conducted by Cancer Care Ontario found that new cases of squamous cell carcinoma, the most common type of cervical cancer, were more likely to be diagnosed in low-compared to high-income neighbourhoods, but no distinct pattern was observed for cases of adenocarcinoma. This incidence pattern difference is tied to the fact that higher income groups are more likely than lower income groups to get tested regularly with Pap smears, which are more effective at preventing squamous cell carcinoma of the cervix than adenocarcinoma and its precursors.

Squamous cell carcinoma develops in thin, flat cells that cover the outer cervix and adenocarcinoma develops in the glandular cells in the inner part of the cervix. Although persistent infection with a high-risk (oncogenic) human papillomavirus (HPV) infection is the primary cause of both cell types, there are variations in the viral strains of HPV that are the dominant cause of each. HPV-16 is the dominant virus in squamous cell lesions (75%) versus roughly equal proportions of HPV-16 and HPV-18 in adenocarcinomas.

- A recent study of cancer of the cervix by Cancer Care Ontario found that, unlike squamous cell carcinoma, there was no distinct relationship between adenocarcinoma incidence and neighbourhood income.
- Adenocarcinoma and squamous cell carcinoma of the cervix differ in many ways, including the dominant strains of HPV that are the primary cause of both cell types and the effectiveness of Pap test screening in preventing them, which is greater for squamous cell carcinoma.
- HPV testing is more effective than the conventional Pap test in detecting both cervical cancer types, especially adenocarcinoma, and may further reduce cervical cancer incidence.

Future improvements to screening and prevention efforts that may increase the detection of cervical cancer—especially adenocarcinoma—include HPV primary screening and increasing participation in the
publically funded Ontario HPV vaccine program for grade 8 girls. To further reduce cervical cancer incidence, the province is working to increase participation in the Ontario Cervical Screening Program (OCSP) and access to screening by ensuring that the OCSP includes all of the elements of an organized screening program.

For more information, see:

References

Methodologic footnote:
Neighbourhoods are defined according to Statistics Canada’s standard geographic unit of dissemination area (DA)/ enumeration area (EA). Neighbourhood income quintiles were derived within each census metropolitan area (CMA), census agglomeration (CA), or provincial residual area not in any CMA or CA. Therefore, the cut-points for each income quintile are community-specific, to reflect the relative nature of this measure and to minimize the effect of large difference in housing costs on household welfare.

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