HUMAN DEVELOPMENT CENTRAL TO CHANGING CANCER BURDEN

Such is the conclusion of a study led by scientists of the International Agency for Research on Cancer (IARC) and published Friday 1 June 2012 in the Lancet Oncology. Strikingly the study demonstrates not only how an increasing cancer burden will fall predominantly on those countries that are in the process of social and economic transition but also that the type of cancers that are most common is changing.

Geographic differences by levels of human development in 2008

In regions with either high or very high levels on the Human Development Index (HDI), four cancers (breast, lung, colorectal and prostate) explain half the overall cancer incidence burden. In low HDI and medium HDI regions, oesophageal, stomach and liver cancers are also common, and taken together, these seven cancers explain 62% of the cancer incidence burden in low HDI and medium HDI regions. Specifically in low HDI regions, cervix cancer ranks as the most common cancer above breast and liver cancers, with Kaposi sarcoma ranking as 4th most frequent.

Geographic differences by country and sex in 2008

In men, nine different types of cancer represent the highest incidence rates in specific countries of the world, with prostate, lung and liver cancers leading, followed by cancers of the oesophagus, stomach and Kaposi sarcoma, which rank first in specific low and medium HDI countries. Among women, the highest incidence rates are either breast cancer or cervix cancer in almost all of the 184 countries studied.

Cancer in transition – a 'westernization' effect

In medium and high HDI settings, the observed declines in cervix and stomach cancer incidence rates appear to be offset by increasing incidence rates of female breast, prostate and colorectal cancers. This may be attributed to a "westernization" effect in countries in rapid societal and economic transition, with reductions in infection-related cancers, outweighed by an increasing burden of cancers more associated with reproductive, dietary and hormonal risk factors.

Cancer burden evolution

Cancer is already the leading cause of death in many high-income countries and is set to become a major cause of morbidity and mortality in the next decades in every region of the world. Assuming the trends observed in medium to very high HDI countries were seen globally, namely increasing rates of colorectal, female breast and prostate cancer incidence, decreasing cervix and stomach cancer rates, and respective increases and decreases in female and male lung cancer (in high and very high HDI areas only), the authors estimate there will be over 22 million new cancer cases annually by 2030. These analyses constitute the first global overview of the current and future patterns of cancer incidence and mortality in relation to predefined levels of HDI.

According to Dr Freddie Bray, the lead author of the report: "This study should serve as a catalyst for further work on human inequality and cancer from a global perspective, in order to better determine how and why macroeconomic determinants influence cancer incidence, mortality and survival." He concluded: "It is imperative that public health clinicians and cancer control specialists are alerted to the increasing magnitude of cancer incidence and mortality worldwide; this analysis serves as an important reference point in highlighting the need for global action to reduce the increasing burden of cancer."

Implications on public health actions

Dr Christopher Wild, IARC Director said: "This study reveals the dynamic nature of cancer patterns in a given region of the world over time. Countries must take account of the specific challenges they will face and prioritize targeted interventions to combat the projected increases in cancer burden via effective primary prevention strategies, early detection and effective treatment programmes".

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