

A lifestyle choice

Is cancer prevention the ultimate goal? Hans-Joerg Senn and Dirk Schrijvers, of ESMO's Cancer Prevention Working Group, gauge the importance of societal change...

During the last two decades, the world's most important health organisations, including the World Health Organization (WHO), have concentrated on the prevention of contagious diseases like AIDS as well as on chronic non-communicable diseases (NCD) such as diabetes, cardiovascular and respiratory diseases and cancer. Important preventive and clinical progress has been triggered by these activities in many parts of the world. It should be noted that 70-80% of deaths in the world's increasingly ageing population are not due to contagious or communicable illness, but are a consequence of these chronic, non-communicable diseases, considerably associated with the increasing lifespan and changing dietary and exposure habits of modern society, characterised by unhealthy overweight, sedentary lifestyle, smoking and elevated alcohol consumption.

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As far as cancer is concerned, including a variety of more than 100 neoplastic (malignant) diseases, WHO estimates a substantial increase of cancer deaths worldwide, from eight million per year in 2010 to more than 17 million until 2030 if no dramatic changes occur in incidence, available treatment options and, consequently, in cure rates in the next 10-20 years. With the use of new drugs, substantial progress has been achieved during the last 30 years; however, no substantial improvements can be foreseen that could change the cure rate of the majority of prevalent cancer types in adults. In Western parts of the world, the rising death toll of cancer will soon surpass cardiovascular death rates.

Under such circumstances, modern cancer medicine and international health agencies can no longer limit their actions to increasing cure rates of frequent cancer types: they definitely have to engage in effective prevention. This is not only based on numerical calculations and desperate expectations, but also on important economical perspectives, as the costs of increasingly elaborate, but usually only

partially successful, treatments of advanced cancer have dramatically increased, influencing health budgets and regulatory dispositions, even in economically developed countries.

Cancer prevention can be exercised at various levels and by various modalities:

Primary cancer prevention is the only way of reducing cancer incidence by early interference with the carcinogenic promotion process, in order to effectively block the occurrence of manifest cancers of various organs.

Secondary cancer prevention (or screening) is the successful detection of cancers at a very early stage of their development, thus preventing progression to a more advanced disease, when occult metastases may already limit curability.

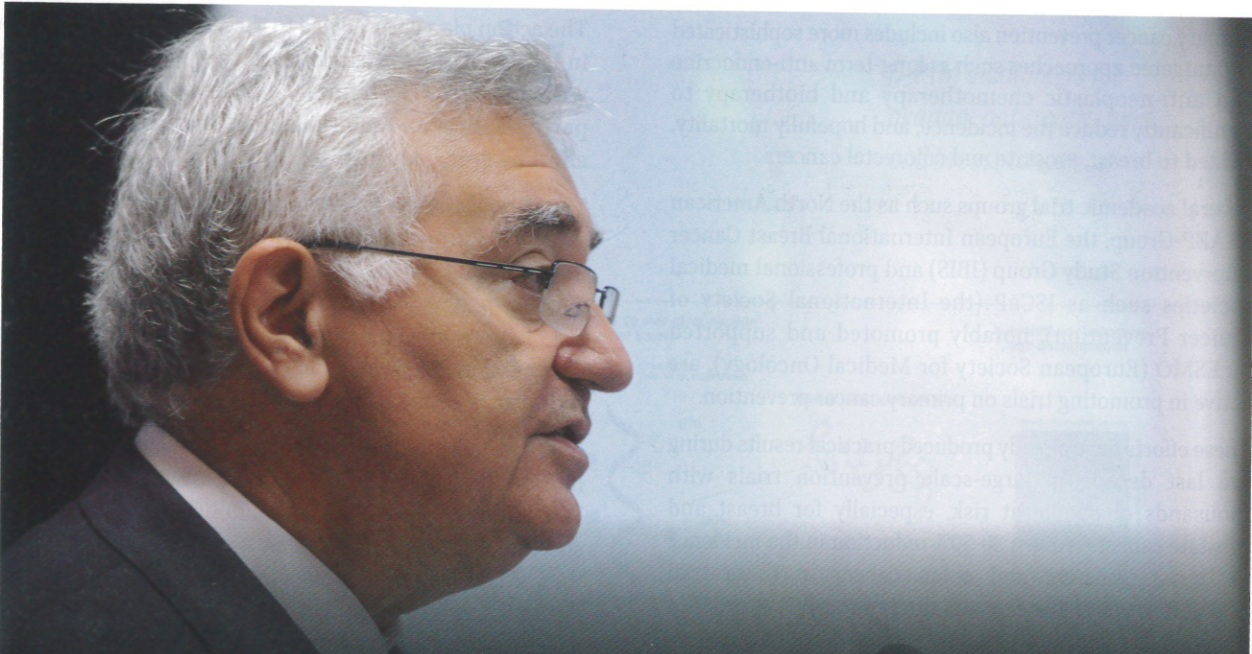
Secondary prevention programmes such as mammography for early detection of breast cancer, endoscopy for colorectal cancer, and PAP tests for cervical cancer should be further implemented in national and regional cancer plans; it has been shown in fact that when the participation rate in screening programmes is optimal (eg. >80%), the mortality rate can be considerably reduced: by 22% for breast cancer in women older than 50 years, 70% for cervical cancer and 16% for colorectal cancer.

Tertiary cancer prevention is the effective prevention of cancer re-occurrence, which is local relapse and/or distant metastases after successful primary treatment (surgery, radiotherapy), by means of systemic chemo-, endocrine- and immunotherapy. Tertiary prevention modality is already successfully developed in several major neoplastic diseases such as breast and testicular cancers, as well as in malignant lymphomas, and is currently being developed for other cancer types.

It is evident that secondary and tertiary cancer prevention are not really preventing cancer, and do not really contribute to the reduction of cancer incidence, but they are aimed at increasing disease-free survival and cure rates.

The potential of primary cancer prevention

The potential of primary cancer prevention is enormous and ranges from theoretically simple, well-known lifestyles choices, such as not smoking to prevent the majority of lung (and other) cancers, to cutting down alcohol consumption in order to diminish oesophageal and liver tumours, promoting weight control and physical



John Dalli: The potential of the European Partnership for Action against Cancer

According to the European Commission, 3.2 million Europeans are diagnosed each year with cancer. It is a global killer and yet many cancers can be avoided by simply making better lifestyle choices.

The European Commission's 'European Code Against Cancer' notes a number of things that can be done to prevent cancers, such as not smoking or becoming overweight, exercising, eating healthily and avoiding over exposure of the sun. It also notes that screening should be undertaken for breast, cervical and colon cancer.

In tackling cancer, screening is certainly the key. Early detection often gives patients a better prognosis than those who are diagnosed in the latter stages of the disease. However, not all forms of cancer have a successful screening programme and can be difficult to test for. This is why ongoing research and collaboration is vital.

In September 2009, the European Commission launched the European Partnership for Action Against Cancer. Running from 2009-2013, the partnership aims to support member states in tackling cancer more efficiently, and provides a framework to collaborate with cancer experts across Europe, ensuring information and resources can be shared.

The end goal is for all member states to have integrated cancer plans and to reduce the incidence of cancer by 15% by 2020. The partnership will achieve this through: prevention (health promotion and early detection); identification and promotion of good practice in cancer related healthcare; priorities for cancer research; and health information, collection and analysis of comparable data.

"Strong action at the European level can have an important knock-on effect at national, regional and local level," says European Commissioner for Health and Consumer Policy John Dalli. "This underlines the potential of the European Partnership for Action Against Cancer. The success of the partnership largely depends on the active participation of its numerous and diverse partners."

Collaboration of resources and expertise is certainly an important aspect of all research, not just cancer, and it is an area that the European Commission is keen to see improve and develop. "It remains to be seen, however, whether this new means of cooperation will result in more sustainable action to tackle cancer," says Dalli. "I sincerely hope that it will."

exercise to reduce the occurrence of various cancer types, especially of female organs, vaccinating exposed populations against viral hepatitis B (such as in Southeast Asia) in order to dramatically reduce liver cancer, or against the human papillomavirus (HPV) to prevent cervical cancer.

Public health awareness campaigns have been developed and tested in relation to limiting tobacco and alcohol use, and safety measures have been applied to limit occupational exposure to hazardous agents. Although specific programmes aiming at certain risk groups have shown some effect, the most effective solution seems to be the direct involvement of governments through legislation

on preventive measures: national and regional cancer plans including prevention, protection of exposure to carcinogenic agents, information on carcinogenic risk of tobacco and alcohol consumption, counter-advertising and a comprehensive ban on advertising and promoting unhealthy lifestyles.

The impact of vaccination on virus-induced cancers has also shown promising results with the hepatitis B vaccination in Southeast Asia, where the incidence of hepatocellular cancer decreased by almost 50%. Great hope is also placed on HPV vaccination to decrease the incidence and mortality due to cervical cancer.

Primary cancer prevention also includes more sophisticated and targeted approaches such as long-term anti-endocrine and anti-neoplastic chemotherapy and biotherapy to significantly reduce the incidence, and hopefully mortality, related to breast, prostate and colorectal cancers.

Several academic trial groups such as the North American NSABP-Group, the European International Breast Cancer Intervention Study Group (IBIS) and professional medical societies such as ISCaP (the International Society of Cancer Prevention), notably promoted and supported by ESMO (European Society for Medical Oncology), are active in promoting trials on primary cancer prevention.

These efforts have already produced practical results during the last decade in large-scale prevention trials with thousands of people at risk, especially for breast and prostate cancer. While a 30-50% reduction in the incidence of breast, prostate and colon cancer in these trial populations is highly encouraging, the ultimate proof of reducing cancer mortality awaits further demonstration, as these prevention trials need long-term follow-up. These multi-year trials are rather problematic to perform, because pharmacological interventions with potential subjective and also objective organ toxicity are psychologically and legally difficult, for clinical trialists, for pharmaceutical companies and for health regulatory agencies.

Outlook

While large-scale lifestyle changes in society would be 'cheap and easy' to implement, and lots of money could be saved from unnecessary overspending for overeating, drinking and smoking, the majority of people – at least in Western societies – are not yet willing to abandon these popular vices. It has always been easier in history, and also in medicine, to give medication to people than to deprive them of common and socially accepted habits that satisfy special needs. For these reasons, it seems more likely that intelligent approaches of medical interventions will be more successful in lowering cancer incidence if these medical prevention approaches would be coupled with attractive insurance and financial incentives. Epidemiologists and health politics experts believe that at least 40% of cancers could be preventable by appropriate lifestyle changes and/or preventive drug interventions.

Several strategies have been developed to this aim, with variable success. The Action Plan for the Global Strategy for the Prevention and Control of NCD of the WHO includes six action points:

- Raise the priority accorded to NCD at global and national levels;
- Integrate prevention and control into policies;
- Establish and strengthen national policies and plans;
- Promote interventions to reduce the main shared modifiable risk factors for NCD;
- Promote research and partnerships for the prevention and control of NCD;
- Monitor NCD and their determinants and evaluate progress at national, regional and global levels.

The action plan gives advice to the stakeholders involved in realising these goals at the EU member state level, with the WHO Secretariat, and among international partners. It is an ambitious plan that will need a big effort by everybody involved.

The Chronic Disease Alliance was recently formed, involving 10 major European medical societies, including ESMO, and initiated by the European Society of Cardiology. A joint policy paper on the prevention of common risk factors was prepared and presented to the EU Commissioner of Health and Consumer Policy, setting out the alliance's strategy for tackling chronic NCD in Europe.

International cooperation is of the utmost importance to improve prevention of NCD and in particular cancer. The WHO initiative on the ban of tobacco use was only successful after adoption by most of its members. Since then, it has become mandatory to all countries to develop initiatives against tobacco. The food industry has in place a lobbying machine against limiting the use of unhealthy fat and sugar containing food. One country alone is not able to limit access to such food. Only international organisations like the WHO, with the help of other organisations and all countries, can effectively promote and implement rules to limit unhealthy lifestyles and the consequences.

International organisations are called upon to integrate prevention and control of cancer in their different strategies. This is something ESMO has been doing for years by including cancer prevention in its educational programmes, and developing a handbook on the topic.

Positive promotion and joint initiatives can turn a healthy lifestyle into a common goal, and financial incentives can result in a rapid realisation among the general population. Therefore all scientific organisations involved in chronic diseases, including cancer, should work together to develop such projects, not only for the general public but also for their members, who can be considered as role models: by giving a good example, they can spread the message effectively in their community.



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