



ELSEVIER

Contents lists available at ScienceDirect

Best Practice & Research Clinical Gastroenterology



2

Overview of gastrointestinal cancer prevention in Asia



Jong-Min Park, PhD, Professor ^{a, 1},
Ho-Jae Lee, PhD, Professor ^{b, 2},
Jun Hwan Yoo, MD, Professor ^{a, 1},
Weon Jin Ko, MD, Professor ^{c, 3},
Joo Young Cho, MD, Professor ^{c, 3},
Ki Baik Hahm, MD, PhD, Professor ^{a, c, *}

^a CHA Cancer Prevention Research Center, CHA University, CHA Bio Complex, Seongnam, Republic of Korea

^b Laboratory of Cancer Prevention, Gachon University, Lee Gil Ya Cancer and Diabetes Institute, Gachon University, Incheon, Republic of Korea

^c Digestive Disease Center, CHA University Bundang Medical Center, Seongnam, Republic of Korea

A B S T R A C T

Keywords:

Chemoprevention
Chemotherapeutics
Phytochemicals
Molecular targeted prevention
Clinical trials

“War on cancer” was declared through the National Cancer Act by President Richard Nixon in 1971, but cancer statistics from the American Cancer Society and other sources indicated the failure of this war, suggesting instead focus on the message that a “prevention strategy” might be much more effective than cancer treatment. While cancer statistics notoriously showed sharp increases in incidence as well as in mortality concurrent with economic growth in Asia, fortunately Asian countries benefit from plentiful resources of natural compounds, which can prevent cancer. Just like cancer chemotherapeutics targeted to kill cancer cells in Western countries, natural agents activating molecular mechanisms for cancer prevention, reversion of premalignant tumors, and even ablation of cancer stem cells, are very abundant in Asia. Currently, these natural agents are under very active investigations targeting the hallmarks of cancer prevention,

* Corresponding author. Digestive Disease Center, CHA University Bundang Medical Center, 59 Yatap-ro, Bundang-gu, Seongnam 463-712, Republic of Korea. Tel.: +82 31 780 5005; fax: +82 31 881 7185.

E-mail addresses: jmpark@cha.ac.kr (J.-M. Park), hojlee@gachon.ac.kr (H.-J. Lee), jhyoo@cha.ac.kr (J.H. Yoo), wisred@cha.ac.kr (W.J. Ko), cjy6695@cha.ac.kr (J.Y. Cho), hahmkb@cha.ac.kr (K.B. Hahm).

¹ Tel.: +82 31 881 7250; fax: +82 31 881 7185.

² Tel.: +82 32 899 6054; fax: +82 32 899 6039.

³ Tel.: +82 31 780 5005; fax: +82 31 881 7185.

<http://dx.doi.org/10.1016/j.bpg.2015.09.008>

1521-6918/© 2015 Elsevier Ltd. All rights reserved.

including selective induction of apoptosis in cancer cells, suppression of growth factors or their signaling, suppression of cell proliferation and of cancer-promoting angiogenesis, induction of mesenchymal-epithelial transition, and disruption of the tumor microenvironment, developing promising cancer preventive agents. However, Asia is the most populous continent in the world and some Asian countries do not have the resources to implement cancer screening programs for early detection or treatment. In addition, despite the excellent cancer preventive screening strategies in some Asian countries, well-designed clinical trials for cancer prevention are somewhat delayed compared to Western countries. In this review article, several phytochemicals/phytoceuticals produced and studied in different Asian countries will be introduced, including Korean red ginseng (pride of Korea), curcumin (Indian spice for life), black or green tea (popular in Japan/Sri Lanka), genistein from tofu (famous Chinese food), diallylsulfide or S-allylcysteine (garlic, popularly consumed as a food ingredient in many Asian countries), capsaicin, 6-gingerol, flavopiridol, and silymarin (abundant in various Asian foods). Whereas in Western countries cancer chemotherapeutics involve strategies not only to block the growth of the primary tumor, but also to inhibit its progression to metastatic disease, the endless pursuit of effective agents for cancer prevention may be a unique and featured strategy in Asia. More active efforts for clinical application of these principles should be supported.

© 2015 Elsevier Ltd. All rights reserved.

Cancer statistics and cancer screening efforts in Asia

Asia accounts for 60% of the world population and half the global burden of cancer is found in this continent. The cancer incidence in Asia is estimated to increase from 6.1 million in 2008 to 10.6 million in 2030, a dismal cancer burden, possibly due to rapidly growing populations as well as enormous socio-economic changes [1,2]. Therefore, effective strategies for cancer prevention as well as early detection are urgently needed. In the ASEAN (Association of Southeastern Asian Nations) region, epidemiological data sourced from GLOBOCAN [3] showed that there were over 700,000 new cases of cancer and 500,000 cancer deaths in the year 2008, leading to approximately 7.5 million disability-adjusted life years lost in one year. Discrepancies in infrastructure, unequal economic distribution, and the drastic epidemiological shift to Western life-styles caused remarkable cancer increments in spite of a sharp economic growth in Asia. On a dark side, the lack of cancer awareness at the government level in some Asian countries also aggravated the core problems in public health policies [4]. Since cancer imparts an enormous burden on society, the solution might come from policies or large-scale interventions by the government. For instance, since increased occurrence of cancer is associated with an increasing prevalence of established risk factors such as smoking, alcohol, overweight, and physical inactivity associated with urbanization, an increasing acknowledgment of the importance of cancer prevention by the public might be required in Asia.

According to McCracken's data on cancer incidence, mortality, risk factors, and screening in the largest Asian American ethnic groups, Chinese, Filipino, Vietnamese, Korean, and Japanese, living in California [5], the four cancer sites more common in "Asian" Americans were stomach, liver, cervix, and lung. In detail, Chinese women had the highest lung cancer death rate, Filipinos had the highest incidence and death rate from prostate cancer, Vietnamese from liver, lung, and cervical cancer, Korean from stomach cancer, and Japanese from colorectal cancer (CRC). Since the risk factors associated with these leading causes of cancer death commonly include tobacco use, overweight/obesity, physical inactivity, poor sanitization, and infection, primary prevention by health education, life-style modification, and avoidance of the aforementioned risk factors should be implemented immediately in Asian

Download English Version:

<https://daneshyari.com/en/article/3254174>

Download Persian Version:

<https://daneshyari.com/article/3254174>

[Daneshyari.com](https://daneshyari.com)