

## EDITORIAL

# Tablets, capsules and injections for cancer prevention?

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**Key words**

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**Antioxidants • Cancer • Prevention • Risk Factors • Vaccine**

Health is the objective of all. Centuries and decades ago, people looked for treatment for acute diseases, especially infectious one, and to lesser extent for chronic diseases. Currently and according to the World Health Organization, health is a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity [1]. General population health demands have progressively increased over the last few years. People not only look for treatment for all diseases, including degenerative diseases related to aging, but ask for prophylactic treatment against all diseases including cancer.

In Western Countries, cancer is the current leading cause of death. Many year ago, free radicals were identified as the main cancer risk factors [2]. The idea was well received by the scientific communities and the general population. Worldwide, the consumption of antioxidants in tablets and capsules is increasing, however and unfortunately cancer incidence continues rising. The one daily table of antioxidant, instead of consumption of green vegetables and fresh fruits, did not reduce cancer incidence.

Hepatitis B virus infections are known as the “silent epidemic” because many people infected don’t experience symptoms until decades later when they develop cirrhosis or hepatocellular carcinoma. Currently, hepatitis B vaccine is included in the vaccine calendar of all European Countries and USA. The vaccine coverage is very high and many adults have been vaccinated over the last years. This shows that most of Western Countries citizens have accepted hepatitis B vaccine as an effective protective measure against hepatitis, cirrhosis and hepatocellular carcinoma. Curiously, many health care workers do not adopt the protective measures against hepatitis B infection and feel protected after receiving the 3 doses of hepatitis B vaccine.

Cervical cancer is one of the most prevalent and aggressive cancers among women. Most of cases were attributed to Human Papilloma Virus (HPV) infection. Recently, a vaccine against the most prevalent carcinogenic HPV genotypes (16 and 18) has been developed. The available studies about this vaccine show that it protects against these 2 carcinogenic genotypes of HPV for at least 5 years. Till date no study has demonstrated its effectiveness against cervical cancer on long term (20 years after vaccination). Social conservatives say that immunizing teenagers could encourage sexual

activity. The mass application of the vaccine could give false impression of protection against sexually transmitted diseases like gonorrhea, syphilis and HIV. Epstein-Barr virus (EBV) usually causes no health problems, but the virus was associated with certain kinds of cancer, including lymphomas and naso-pharyngeal carcinoma [3]. Recently, several clinical trials have been conducted to evaluate the efficacy of a new vaccine against EBV. It is assumed that this vaccine could protect individuals against EBV infection and hence presumably reduce the burden of EBV-associated cancers by stimulating the body’s natural defences [4, 5].

Of no doubt cigarette smoking is the main risk factor for most malignant diseases especially lung cancer, the first killing malignancy worldwide. Cigarette smoking causes 87% of lung cancer deaths and is responsible for most cancers of the larynx, oral cavity and pharynx, oesophagus, and bladder. These facts about the hazards of cigarette smoking are well known by most of the general population in Western Countries. In 2005, 24% of adults aged 16 or over in Great Britain smoked cigarettes, indicating a slight fall in the prevalence of smoking among both men and women since the late 1990s [6]. This unexplained high prevalence of smoking demonstrates clearly the discrepancy between our knowledge, attitude and practice.

Obesity is the new epidemic and it is estimated that > 25% of children and adults in Western Countries are overweight (BMI  $\geq$  25 kg/m<sup>2</sup>). Of sure, lack of physical exercise and sedentary life are the main causes of the obesity epidemic. Junk food and lack of consumption of green vegetables and fresh fruits augment the problem. Obesity, lack of physical exercise, sedentary life, junk food and low consumption of green vegetables and fresh fruits are well-known cancer risk factors [2].

It is clear that we look for health but we are not ready to adopt measures for getting better health. It is much easier to swallow tablets or capsules to get more healthy. Intramuscular injections with all types of vaccines are more comfortable than using protective measures against blood borne and sexually transmitted diseases. Quitting smoking is not that easy meanwhile one daily table of antioxidants is very easy. We do not want to control our diet and prefer junk food. We can enjoy seeing the television instead of going out to the park and run after nothing.

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