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Review

Colorectal cancer prevention in Europe: Burden of disease and status of screening programs

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ABSTRACT

Colorectal cancer is a major public health challenge worldwide. In Europe it is the first malignancy in terms of incidence and the second in terms of mortality in both genders.

Despite evidence indicating that removal of premalignant and early-stage cancer lesion scan greatly reduce mortality, remarkable differences are still found among countries both in terms of organized screening programs and of the tests used.

In 2003 the European Council recommended that priority be given to activation of organized cancer screening programs, and various states have been making significant efforts to adopt effective prevention programs with international quality standards and centralizing screening organization and result evaluation.

After a 2008 European Union report on the state of screening program, activation highlighted that little more than 50% (12/22) of Member States had colorectal cancer screening programs, Screening programs have been adopted or earlier pilot projects have been extended nationwide.

This paper examines the state of activation and the screening strategies of colorectal cancer screening programs in EU States as of July 2013.

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Introduction

Colorectal cancer (CRC), one of the most common malignancies in the Western world, is first in incidence and second in mortality in Europe in both genders, with ca.446,000 new cases arising in Europe each year. Mortality is high (~214,000 deaths/year), second only to lung cancer (353,000); the average incidence rate in the European Union (EU28) is 39.9 per 100,000 population (world age-standardized rate, ASR-W) in men and 25.2 ASR-W in women (Eucan, 2013).

Incidence varies, with higher peaks in central European States and lower peaks in some Mediterranean States (Fig. 1); however, even in the latter countries the disease burden is higher than in many other areas of the world (GLOBOCAN) (Globocan, 2013). Accordingly the European Council recommended to prioritize the activation of organized cancer screening programs (European Council, 2003).

A 2008 European Commission (EC) report on the progress of cancer screening in EU 28 stressed that only 12/22 states had organized population-based (PB) CRC screening programs in place or due to be activated (European Commission, 2008) and urged Member States to ensure fair access to preventive services and cancer screening programs by all citizens.

Over 95% of CRC cases would benefit from surgical treatment if diagnosed early or at the stage of the premalignant polyp (Pawa et al., 2011), and several large-scale studies have shown a significant reduction in mortality following the implementation of mass screening programs (Burt, 2010; Gupta et al., 2008).

In 2010 the first European Guidelines laid down CRC screening and diagnosis quality levels (Segnan et al., 2010). The European Parliament Resolution of 6th May 2010 encouraged the EC to promote prevention by all possible means and to encourage Member States to invest more in primary prevention (preventing or reducing the factors causing or promoting cancer, such as exposure to environmental pollutants), screening and early diagnosis (European Commission, 2010).

Several EU countries have now implemented or are adopting new CRC programs or have extended previous pilot projects nationwide (Benson et al., 2008, 2012; Brenner et al., 2008; Cancer.gov, 2013; Center et al., 2009; Curado et al., 2007; Swan et al., 2012; Von Karsa et al., 2008; Zavoral et al., 2009).

Here we report the status of activation and screening strategies of CRC screening programs in EU States as of July 2013.

Materials and methods

EU28 epidemiological data sources

The richest data source is the GLOBOCAN site (Globocan, 2013) of the International Association of Cancer Registries (IARC), which provides access to multiple databases to assess cancer impact in the world (Ferlay et al., 2010). The latest survey, conducted in 2008, was published in 2010 (Globocan incidence/mortality data, 2013) (Table 1).

Incidence data are collected in national cancer registries but are generally provided with a delay, as they require to be aggregated and published; information can also be found on registry websites.

In Italy, some registries are accredited on a regional basis (e.g. those of Umbria and Veneto) and others on a municipal basis (Torino), covering overall about 20 million people (2012 data from AIRTUM - Italian Association of Cancer Registries) (AIRTUM, 2013).

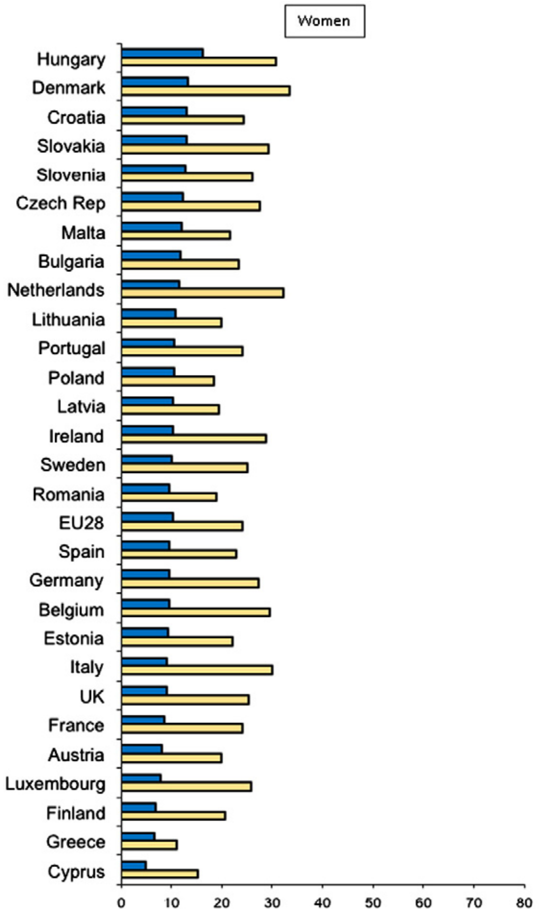

Fig. 1. Colorectal cancer: mortality and incidence in women (left) and men (right) in EU28 as of July 2013. Adapted from: Ferlay J, Shin HR, Bray F, Forman D, Mathers C and Parkin DM. GLOBOCAN 2008 v2.0, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 10 [Internet]. Lyon, France: International Agency for Research on Cancer; 2010. Available from: http://globocan.iarc.fr. Last accessed April 10, 2013. ASR-W: world age-standardized rates per 100,000.