Breast Cancer (BC) Factsheet

Estimated incidence and mortality from breast cancer, 2012

Estimated incidence from breast cancer in women, 2012

Estimated mortality from breast cancer in women, 2012

- Breast cancer (BC) develops in the breast and occurs in both men and women. Women are about 100 times more likely to develop the disease than men and therefore this sheet refers to women only.
- An estimated 464 000 women were diagnosed with BC in Europe in 2012. BC was the leading cancer site among women in all European countries, accounting for 29 % of all new female cases that year.[1]
- In the same year, 131 000 women were estimated to die from BC, accounting for 17% of all new female cancer deaths in Europe and making it the most common cause of female cancer death.[1]
- Worldwide: BC is, after lung cancer and excluding non melanoma skin, the second, most common cancer in the world (1.67 million, 25 % of the total) and the most common cancer in women. Age-standardised incidence rates range from
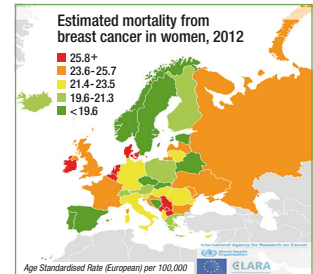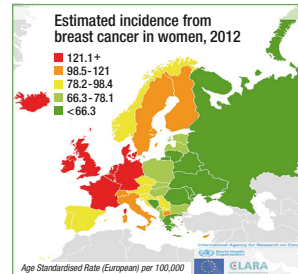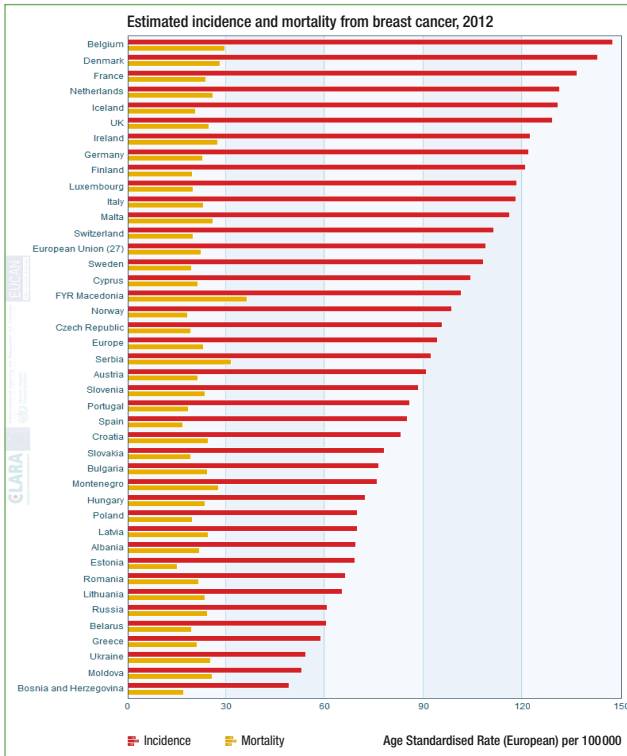
27 per 100 000 person-years (PY) in Middle Africa and Eastern Asia to 96 per 100 000 PY in Western Europe.[2]
- Worldwide: BC is the most frequent cause of cancer death in women and its mortality ranges from 6 per 100 000 PY in Eastern Asia to 20 per 100 000 PY in Western Africa.[2]

Regional differences in Europe in 2012 Estimated incidence and mortality[1]

- The countries with the highest estimated incidence rates in Europe were Belgium, Denmark and France. Belgium reported the highest estimated age-standardised incidence rate* (ASR-E) of 147.5 new cases per 100 000 PY compared to the European average** ASR-E of 94.2.
- The countries with the lowest estimated incidence were Ukraine, Moldova and Bosnia and Herzegovina with ASR-E less or equal to 54.0.
- The countries with the highest estimated mortality were FYR Macedonia with ASR-E of 36.3 deaths per 100 000 PY, Serbia (ASR-E: 31.5) and Belgium (ASR-E: 29.5), compared to the estimated European average of 23.1.
- Estonia (ASR-E: 15.1), Spain (ASR-E: 16.7) and Bosnia and Herzegovina (ASR-E: 16.9) reported the lowest estimated mortality rates from BC in Europe for 2012.

Temporal changes in selected European countries[1,3]

- Due to differences in country-specific screening activities, BC care services and the distribution of aetiologi-

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* ASR-E: age-adjusted rate to the standard European population (Doll & Cook, *Int J Cancer*, 1967) to account for the different age structure in various countries.

** The European Cancer Observatory (ECO) estimates refers to the 39 European countries defined by the United Nations plus Cyprus.[2]

Incidence Time Trends, Breast — Female, Age 0-85+

Mortality Time Trends, Breast — Female, Age 0-85+
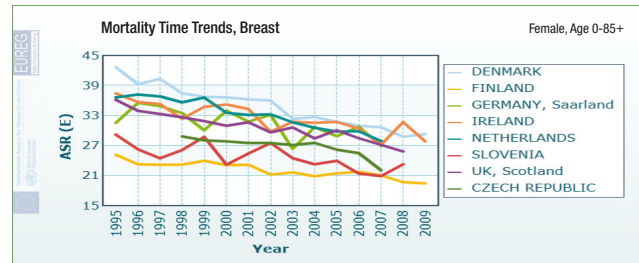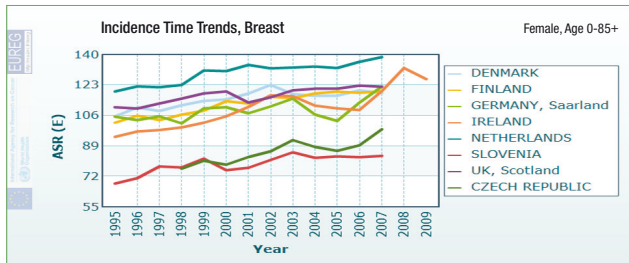
cal factors, the explanation of incidence and mortality trends of BC in Europe can be difficult. However, a predominant pattern can be seen:

- The incidence of BC has continued to increase in almost all European countries in recent decades.
- However, mortality rates have fallen in many countries since the mid-1990s, irrespective of screening.

BC aetiology

- Age: the risk of BC increases with age and it is more than 4 times higher for women at age 65+ vs. <65 years old. The median age at the time of breast cancer diagnosis is 45.[4,19,20]
- Family history: women with a family history of BC are at increased risk of developing BC. The risk is 1.5 times higher for women with one second-degree relative with BC and is further increased (up to more than 4 times) when the affected relative is a first-degree or more than one, or diagnosed at a younger age.
- Exposure to oestrogen: the duration and intensity of exposure to oestrogen increases the risk of BC. Therefore, early menarche (before age 12), late menopause (after age 55), not having children (or having them at a later age (>30) – long uninterrupted exposure) increase the risk of BC with 1.3 to 2 times.[19,20] Hormone replacement therapy (HRT) is associated with an increased risk of developing BC. The risk continues to increase the longer HRT use continues, but returns to normal once HRT is stopped.[6,7,8]
- Genetic predisposition: inherited mutations contribute to 5-10 % of all BC cases.[9,10] Two dominant genes, BRCA1 and BRCA2, account for 15 %-20 % of familial BC.[9] Other inherited conditions are associated with smaller increased BC risk.[21]
- Breast conditions: dense breast tissue, benign breast proliferative lesions and non-invasive lobular carcinoma are factors, increasing the risk of BC with 4 to 7 times.[5,22-24]
- Lifestyle-related factors: obesity[12,13] and a lack of physical activity[11] increase the BC risk with 1.5-2 times while tobacco use and alcohol consumption[14,15] with 7 %-12 %.[25-28]

- Other risk factors: radiation (high-dose radiation therapy to the chest such as for Hodgkin lymphoma), occupational exposures (ethylene oxyde).[29,30]

Screening and prevention

- Mammographic screening (MS), in spite of certain controversies (e.g. overdiagnosis and false positive results leading to psychological and financial costs) has been widely accepted as a main tool for early detection of BC. Many well organised trials concluded that population-based screening by MS was followed by a significant reduction in mortality from BC – about 20 %.[16]
- The recommendations regarding participation in MS (e.g. at what age, duration and frequency of screening) vary across countries and organisations.
- There is no evidence that clinical or self-breast examination reduces mortality from BC.[17]
- Magnetic resonance imaging (MRI), although costly, can detect tumours not visible on mammograms, but it has up to 30 % more false positives than MS.[18] However, MRI can be recommended for women at high risk of BC during their lifetime.
- Maintaining a healthy weight, limiting alcohol use, not smoking, be physical active, breast feeding, limiting dose and duration of hormone therapy can lower the risk of BC.

Conclusions

- BC continues to be the most common malignancy and the main cause of cancer death among women in Europe.
- Established known risk factors include: increasing age, family history, exposure to oestrogen, genetic predisposition, some breast conditions and lifestyle-related factors.
- Attending MS remains the most effective means available to detect BC in its earliest stages, especially for women over age 50.

A list of references (1-30) is available (in PDF) at: http://www.encr.eu/images/docs/factsheets/ENCR_Factsheet_Breast_2014_References.pdf.

The European Cancer Observatory data (http://eco.iarc.fr) were used for the production of this factsheet.

ENCR
European Network of Cancer Registries

The European Network of Cancer Registries (ENCR), established within the framework of the Europe Against Cancer Programme of the European Commission, has been in operation since 1990. The ENCR promotes collaboration between cancer registries, defines data collection standards, provides training for cancer registry personnel and regularly disseminates information on incidence and mortality from cancer in the European Union and Europe.