Cancer and other alcohol–related diseases in women and men

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In most areas of the world, women drink less than men, and consequently the health consequences of alcohol are less frequent in women than in men. Still, alcohol remains a major cause of disease and death in women, too, and there are sex-specific diseases (mainly breast cancer) which are of major relevance for women only. Thus, in Russian male smokers, heavy drinking is associated to an almost doubling of mortality in middle age (35-54 years, from 20% to 35% cumulative risk of death). Among women, heavy drinking was much less common in Russia, but appeared to involve similar relative excess risk of total mortality [1].

Alcohol drinking is related to a number of diseases and causes of death, including accidents and violence, cirrhosis and other liver conditions, several cancers, besides – at very high doses – death from acute intoxication, psychosis and heart failure. While all of these conditions are related to the quantity and the pattern of drinking [2], a valid quantification of the sex differences in alcohol-related disease incidence and mortality is available mainly for cancer.

In 2002, about 390,000 incident cancers (3.6% of the total number) were attributed to alcohol drinking worldwide - 300,000 in men (5.2%) and 90,000 in women (1.7%). Corresponding figures for cancer deaths were over 230,000 (3.5%) - 195,000 in men (5.1%) and 38,000 in women (1.3%) [3].

We updated these figures to 2012, using estimates of cancer incidence and deaths [4,5] and relative risks for alcohol related neoplasms from two recent meta-analyses [6,7,8]. Over 10 years, the total number of alcohol attributable cancer cases increased to about 770,000 worldwide (5.5% of the total) - 540,000 in men (7.2%) and 230,000 in women (3.5%). Corresponding figures for cancer deaths were about 480,000 (5.8%) in both sexes combined - 360,000 (7.8%) in men and 115,000 (3.3%) women. Breast cancer was the first alcohol-related site in women, with about 120,000 cases and over 30,000 deaths worldwide, followed by esophagus, liver and oral cavity and pharynx. The relatively high survival from breast cancer explains the greater proportion of incident cases as compared to deaths in women than in men. The proportion of cancer cases and deaths in women versus men was lower in South East Asia (1.2% of cases, 1.3% of cancer death versus over 10% in men) as compared to Europe and the Americas.

In summary, more than one in four alcohol-related cancers worldwide, and one in five cancer deaths are in women. The absolute numbers, as well as the proportions, of alcohol-related cancers have been rising in women over the last decade.

No valid data are available on sex-differences in other alcohol-related diseases and deaths, but it is unlikely that these are appreciably different from those for cancers, at least in most high income countries where cancer accounts for over 50% of the total burden of alcohol-related diseases and deaths [9] - but not in Russia or France in the past, when alcohol consumption was exceedingly high [10,11,12]. Given the low incidence and mortality from cardiovascular diseases (CVD) in women, it is however likely that also alcohol-related CVD cases and deaths are appreciably less in women than in men.

Moderate alcohol consumption has favourable impact on cardiovascular disease (CVD) and death and on total mortality [13,14], but the impact of this is likely to be greater in men, who have higher incidence and mortality from CVD than women, particularly in middle age and in the elderly.

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