



Ireland failing in the battle against CVD

With signs of a reversal of the recent decline in CVD deaths we must redouble our efforts to combat risk factors, writes Eoin O'Brien

MORE PEOPLE STILL DIE of cardiovascular disease (CVD) – high blood pressure, coronary heart disease, strokes and arterial disease – every year in the Ireland than from any other cause. It kills more people than cancer, suicide and road accidents combined. However, the numbers dying from heart disease have been decreasing steadily over the past 20 years. In 2006 there were 3,700 fewer deaths from heart attack than in 1984.

But is this gratifying trend in the hard-fought battle against cardiovascular disease at an end? This may indeed be so if the most recent figures from the Central Statistics Office (CSO) are representative of an overall change. Between January and March of 2007, 2,937 people died from cardiovascular disease compared to 2,665 in the first quarter of 2006 – an alarming 10% increase in mortality!¹

The optimist will take solace from the fact this may be just a statistical aberration, and as the CSO warns, recently introduced changes in coding call for caution in comparing quarterly statistics that may mask the true picture until the annual figures are compiled. However, there are ominous warnings coming from Europe and the US, where similar trends to those highlighted in the CSO figures are also being seen.

CVD in the United States

CVD remains the number-one cause of death in the US, being accountable for 869,724 deaths in 2005.² Cancer was the second leading cause, and stroke, when considered separately from CVD, the third.

In 1999, the American Heart Association (AHA) set a strategic goal of reducing the death rates from coronary heart disease and stroke by 25% by 2010. New mortality data from the Centers for Disease Control and Prevention (CDC) show these targets are being achieved ahead of time – coronary heart disease and stroke age-adjusted death rates are down by 25.8% and 24.4%, respectively.^{3,4}

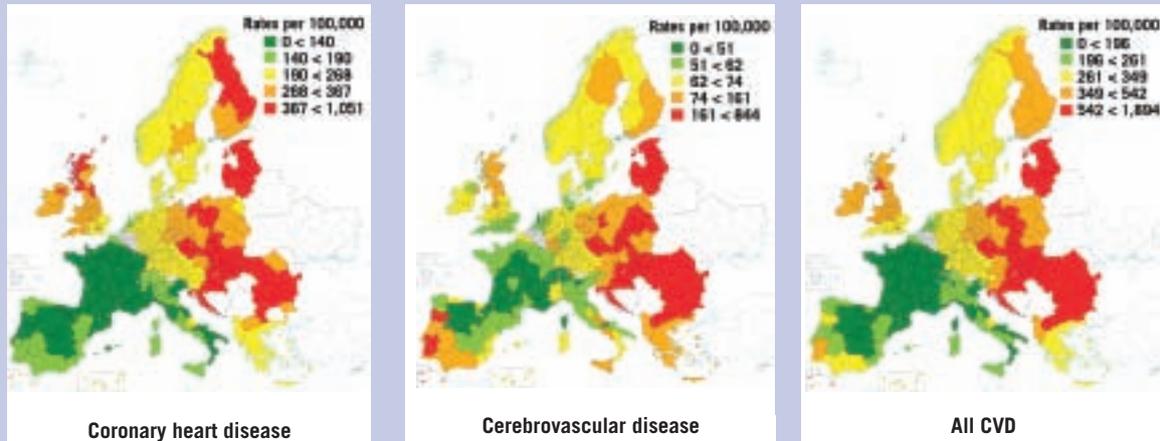
These reductions in the death rates for coronary heart disease and stroke equate to approximately 160,000 lives saved in 2005 (the most recent year for which data is available) compared to the 1999 baseline data. If the current mortality trends hold, the age-adjusted death rate for coronary heart disease will decline by 36%, for stroke by 34%. As the population size in 2008 will be larger, it is projected that the estimated lives saved in 2008 will be approximately 240,000.

However, in addition to mortality goals, a 25% reduction in the risk factors that cause CVD were also built into the



AHA targets and here the picture is far from rosy. Uncontrolled hypertension has fallen by only 16%; elevated blood cholesterol by only 19.2%; smoking by only 15.4% and physical inactivity by only 2.5%, whereas the prevalence rates for obesity and type 2 diabetes are actually increasing, and are appearing at earlier ages than ever before.

Other factors influencing the statistics are low daily fruit and vegetable consumption, alcohol overconsumption, and the psychosocial index.^{3,4} Among adults, 66% are now overweight, while 31.4% are obese. Among children and adolescents aged 12-19, 17% are overweight (up from 6.1% in 1971-1974), as are 17.5% of six to 11-year-olds (up from 4%). And even in the two to five age range, 14% of children are overweight. One-and-a-half million new cases of diabetes were diagnosed in people over the age of 20 in one year, and it is projected that diabetes prevalence will more than double from 2005 to 2050.

**European age-standardised mortality (men; age 45-74 years, year 2000)**

Source: Müller-Nordhorn J et al. *Eur Heart Journal* 2008; DOI:10.1093/eurheartj/ehm604, Figure 5. By permission of Oxford University Press

In addition, the incidence of reported end-stage renal disease has more than doubled in the past 10 years, and the prevalence of chronic kidney disease has increased to 16.8%, from 14.5% in 1988-1994.⁵

Given these trends, one hardly needs to be a clairvoyant to predict that death rates from CVD will soon begin to rise. And such indeed is the evidence – the estimated annual percentage decrease in mortality from coronary heart disease has accelerated among younger women and men in more recent years compared with earlier periods, thus pointing towards a dismal epidemic for future generations.

CVD in Europe

Statistics from the US, though generally more favourable than European predictions, cannot be used too readily as a yardstick of what is happening elsewhere, being particularly influenced by socio-economic and ethnic disparities. Nonetheless, US patterns are being mirrored in parts of Europe (including Ireland) allowing us to forecast the future in cardiovascular trends for affluent societies, and the soothsayer's message is not a happy one.

To start with, a recent survey in the UK is particularly disturbing.⁶ As in Ireland, mortality rates from coronary heart disease have continued to decline steadily since the late 1960s, which is not to deny the fact that coronary heart disease remains the leading cause of death and exacts a heavy social and economic toll.

What is interesting, and worrying about these UK statistics is that the previous falls in age-specific mortality rates seem to be flattening in men and women aged less than 55 years, whereas mortality rates in older adults continue to decline. It is salutary to consider that this trend is occurring despite the increasing use of evidence-based treatments such as angioplasty, thrombolysis and ACE inhibitors.

As in the US, the explanation is not difficult to find: between 1993 and 2003, some of the largest relative increases in obesity and diabetes have occurred among adults aged 45 years; mean concentrations of cholesterol have fallen little or even increased among some of the

younger age groups; the previous decline in smoking rates may be levelling off among young adults with the smallest reduction seen in men aged 25-34; material deprivation may be an additional risk factor in younger adults, especially among the immigrant population. It is not surprising, therefore, to expect to see adverse trends in CHD mortality rates appearing first among young adults.

Now, to add to this report, we have two further disturbing sets of statistical analyses. The first of these is the 2008 *European Cardiovascular Disease Statistics*, (an indispensable resource for anybody involved in reducing the burden of CVD in Europe) which bring together all the available sources of information about the burden of CVD in Europe, including data on death and illness, treatment, the prevalence of behavioural risk factors for CVD (smoking, diet, physical inactivity and alcohol consumption), and the prevalence of medical conditions associated with CVD (raised cholesterol, raised blood pressure, overweight and obesity, and diabetes).⁷

Also included is an analysis of the staggering economic costs of CVD in Europe. CVD costs the EU just under €192 billion per annum, some 60% of which is for healthcare costs and 20% is from lost productivity and the cost of informal care. The direct healthcare costs alone cost each resident of the EU €223 per annum. The cost of inpatient hospital care for people who have CVD accounted for about 54% of these costs, and that of drugs for about 28%.

Almost one-fifth of healthcare expenditure on CVD in the EU is due to stroke, which is estimated to cost the EU economy over €38 billion a year. Inpatient hospital care for people who have strokes accounted for about 80% of these costs and drugs accounted for about 6%.

Of the total cost of stroke in the EU, around 49% is due to direct healthcare costs, 23% to productivity losses and 29% to the informal care of people with stroke.

As in the US, coronary heart disease by itself remains the single most common cause of deaths in the EU but the 2008 *European Cardiovascular Disease Statistics* show a



reduction in the crude number of CHD deaths when compared with the 2005 edition.

This reflects a general trend in western, northern and southern European countries, where CHD mortality rates are falling steadily. The situation in some central and eastern European countries is very different, with CHD rates rising dramatically. This gradient is more marked for stroke mortality, where the crude number of deaths increased since 2005. Over 200,000 men and nearly 300,000 women die of stroke in the EU every year.

Each year, CVD causes over two million deaths in the European Union (EU), which represents nearly half of all deaths. CVD is the main cause of death in women in all countries of Europe and is the main cause of death in men in all countries except France, the Netherlands and Spain.

Over a third of deaths from CVD are from coronary heart disease (741,000 deaths per annum) making it the most single common cause of death in the EU, with one in six men (16%) and one in seven women (15%) dying from the disease. Just over a quarter of deaths from CVD are from stroke, with one in 10 men (9%) and one in eight women (12%) dying from the disease, but with increasing longevity and rising blood pressure these figures can only rise.

In another recent European report, Jacqueline Müller-Nordhorn and her colleagues calculated age-standardised mortality rates for coronary heart disease and stroke from data provided by the statistical office of the European Communities (Eurostat) and the national statistics offices of all the countries.⁸

They focused on those aged 45-74, as mortality in younger age groups is very low. They divided the rates per 100,000 of the population into quintiles of lowest to highest mortality – the lowest quintile is indicated in the maps by dark green, the second-lowest by light green, the middle quintile by yellow, the second-highest by orange, and the highest by red (see *Figure 1*).

By looking at these maps it is readily evident that Ireland, with the exception of stroke, ranks with the worst countries in Europe for CVD mortality, coming 18th out of the 30 countries, with countries such as Latvia, Estonia and Slovakia performing the worst.

Irish people are three times more likely to die from heart disease than people in France, Portugal and Italy.⁸ Despite being one of the wealthiest countries in Europe, mortality rates from CVD are as bad as those in less well-off eastern European countries such as Poland, Macedonia and Croatia.

The study shows that 223 people (aged 45-74) per 100,000 of the Irish population died from coronary heart disease in 2000, compared with just 65 in France (with the lowest death rate in Europe), 87 in Portugal and 91 in Italy.

How can Ireland prevent the inevitable?

It is one thing to look at the trends in mortality statistics but this should not blind us to the fact that in Europe non-fatal events, such as stroke and heart failure, far from declining, are on the increase, mainly because of increased longevity.

Approximately 10,000 acute strokes are admitted to hospital in Ireland each year and for those who survive – some 30,000 people – only half make a complete recovery, leaving the remainder with the problems of coping with serious

disability and in need of support to cope with the activities of daily life.

High blood pressure – the major determinant of stroke – affects over a third of the adult population and this figure doubles after the age of 60 years. Globally, 62% of stroke, 49% of coronary heart disease and 14% of other cardiovascular disease has been attributed to inadequate control of blood pressure.

One of the most worthwhile initiatives to reverse the growing epidemic of stroke and heart attack in an aging society will be the control of high blood pressure, which has the potential to reduce stroke by over 50%.⁷

Of all of these risks, uncontrolled hypertension is a major causative factor in stroke. The age-adjusted prevalence of hypertension (both diagnosed and undiagnosed) in 1999–2002 was 78% for older women and 64% for older men. Subjects with BP less than 120/80mmHg have approximately half the lifetime risk of stroke of subjects with hypertension.²

So what can we, as practising doctors, do to combat what is clearly a rising cardiovascular epidemic, of which we are seeing only the tip of the iceberg? We need to alert our patients to the dangers by giving appropriate lifestyle advice in relation to diet, salt and alcohol intake, smoking, exercise, and importantly encouraging our patients to know their numbers – weight, blood pressure, total and LDL cholesterol and blood sugar – and not only their numbers, but what levels of normality they should strive to achieve.

Finally, we need to shake of what has been dubbed therapeutic inertia – patients with any evidence of cardiovascular disease need to be treated so as to obtain optimal cardiovascular status.

Only by doing so will we avert the onset of stroke, heart attack and heart failure. There is a limit, however, to what doctors can do – the healthcare providers must acknowledge the omens and act urgently. **f**

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