3273  Atrial fibrillation and the ageing population: an emerging epidemic?

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Abstract: Atrial fibrillation (AF) is the most common cardiac arrhythmia and an important cause of cardiovascular morbidity and mortality (particularly in relation to stroke and heart failure). This study examined the likely burden of AF in respect to its population prevalence among those aged 45 years or more, in addition to the number of hospital admissions associated with a principal diagnosis of AF in the UK for the period 2000-2020.

Methods: We applied contemporary UK-specific estimates of the population prevalence of AF and the rate of hospital admissions associated with a principal diagnosis of AF (on an age and sex-specific basis), to projected changes in the UK population for the years 2000, 2005, 2010 and 2020. Using recent trends analyses, in addition to population changes alone, we also considered the likely (additional) impact of underlying increases in the prevalence of AF and related hospitalisations.

Results: We estimate that in the year 2000 there were approximately 290,000 men and 254,000 women aged 45 years or more being actively treated for AF in the UK: a combined total of 544,000 individuals representing just under 1% of the UK population overall. Based on population changes alone (i.e. stable prevalence rates), we estimate the number of men and women being treated for AF will have increased by 33% and 18%, respectively, by 2020. If combined with a modest 5% rate increase in the prevalence of AF every 5 years across all age groups (due to a greater burden of contributory cardiovascular disease states), these figures will increase by 54% and 33%, respectively, with about 1.3% of the UK population affected by 2020. In both models, the greatest increases are predicted to occur in the period 2010-2020 because of the ageing Baby Boomer population cohort. We also estimated that in 2000 male and 38,300 female admissions for AF (principal diagnosis) in the UK during the year 2000. Based on population changes alone, these admissions are predicted to rise by 31% and 18%, respectively, by 2020. If, however, current trends in the rate of increase of such admissions are maintained, these figures are predicted to rise by 95% and 325%, respectively. Once again, the greatest increases are likely to occur between 2010 and 2020.

Conclusions: In this unique study, we have shown that AF already represents a major health problem within the UK population. Furthermore, without substantial changes in relation to its prevention and treatment, the burden of AF (particularly as a precursor of stroke and heart failure) is likely to rise substantially in the next 20 years.

3275  The associations between climatological variations and cardiovascular mortality, in greater Athens area, during 15 years period (1987-2001)

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Background: The fact that environmental conditions are associated with the pathogenesis of physical disease was known as early as the time of Hippocrates. The aim of this study is to evaluate the association between climatological variations, with cardiovascular mortality, on the greater Athens area inhabitants.

Methods: We studied mean monthly values of air temperature and relative humidity (data from the National Observatory of Athens) as well as the cardiovascular mortality (local registers), during 1987-2001. In order to evaluate the association between cardiovascular mortality and the climatological variations we applied a special, empirically determined temperature-humidity index (T.H.I.), suggested by E.G. Thom (T.H.I. = Ta + 0.58(TH - 0.01 RH) + 14.9). Ta = mean monthly dry-bulb air temperature in °C, RH = mean monthly relative humidity in %). Statistical analysis was based on Poisson regression models, after taking into account the effect of age group, seasonality, air pollution, and the number of holidays and strikes (confounders).

Results: An age-adjusted positive trend in CHD mortality was observed during the investigated period (>28% in all ages, p < 0.001 and <22% in >75 years old group, p < 0.001). Additionally, CHD mortality was positively related with relative humidity (p < 0.001) and inversely associated (p < 0.01) with mean air temperature, during the studied period. Moreover, a consistent association between T.H.I. and CHD deaths was found (b=0.72, p < 0.001), with more significant results in the elderly (p < 0.001). In particular, a 10-unit decrease in the T.H.I. scale rates by 22% the relative CHD mortality (p < 0.01), while T.H.I. < 24 increase by 53% the risk (odds ratio = 1.53, p < 0.05) of observing the daily number of cardiovascular deaths in the upper quartile (i.e. > 42 deaths/day) compared to the lower quartile (i.e. < 29 death/day).

Conclusions: Our findings suggest that a strong association between climatological variations and CHD mortality seems to exist. The suggested cut-off point of 24 in the T.H.I. scale could be a useful tool in public health practice, in order to reduce mortality rates, especially in countries with extreme environmental phenomena. The previous findings are in accordance to the reports from other studies, especially, in the US, but it is hard to claim that they support evidence for causality. Thus, further research is needed in order to investigate the mechanisms by which environmental conditions affect CHD mortality.
The associations between climatological variations and cardiovascular mortality, in greater Athens area, during 15 years period (1987-2001)

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1.53, p < 0.05) of observing the daily number of cardiovascular deaths in the upper quartile (i.e. > 42 deaths/day) compared to the lower quartile (i.e. < 29 deaths/day).

Conclusions: Our findings suggest that a strong association between climatological variations and CHD mortality seems to exist. The suggested cut-off point of 24 in the T.H.I. scale could be a useful tool in public health practice, in order to reduce mortality rates, especially in countries with extreme environmental phenomena. The previous findings are in accordance to the reports from other studies, especially, in the US, but it is hard to claim that they support evidence for causality. Thus, further research is needed in order to investigate the mechanisms by which environmental conditions affect CHD mortality.

Topics:
Epidemiology/prevention, other

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Trends in cardiovascular disease in Europe

Chairpersons: R. Masia Marlorell (Girona, ES); J. Muntwyler (Zurich, CH)

Wednesday, 04 September, 2002 12:00