Eur J Epidemiol (2009) 24:721–723
DOI 10.1007/s10654-009-9410-3

EDITORIAL

Recent trends in cardiovascular epidemiology

Albert Hofman

Published online: 2 December 2009

In recent years new areas of research in cardiovascular epidemiology have become prominent, also in EJE. In particular, the emphasis has increasingly been on genes implicated in cardiovascular diseases [1–5] and on imaging of the heart and circulation [6]. Often these studies are being conducted in large scientific collaborations [1, 7, 8]. As a major example of this may serve the consortia that currently work on genome wide association studies (GWAs) of cardiovascular risk factors and diseases. The large number of genes implicated in cardiovascular disease through, amongst others, the work of the CHARGE consortium, in which five population based studies collaborate, is clearly impressive [8–10].

The bulk, however, of studies in cardiovascular epidemiology is still on putative risk factors [11–16], with particular focus on nutrition [17–21], on socio-economic factors and health inequalities [22–27], and, more recently, on physical activity [28–37] and inflammatory factors [1, 38–40]. Methods of cardiovascular studies have also received attention [41–45].

The Commentary of Thelle [46] in this issue of EJE emphasizes another classic type of epidemiologic study, a type that is relatively unsung but important, both conceptually and in terms of numbers. I refer to the studies of frequency measures and trends therein of rates and risks of cardiovascular morbidity and mortality [47–56]. The purpose of this Editorial is to underscore that at EJE we welcome studies of basic occurrence measures of diseases and risk factors. Thelle's Commentary is a good reminder that much of the success of cardiovascular epidemiology started with heterodemic frequency comparisons in the Seven Countries Study [49], and similar homodemic ones in the Framingham Heart Study [9].

A. Hofman (✉)
Department of Epidemiology, Erasmus Medical Center, Rotterdam, The Netherlands
e-mail: a.hofman@erasmusmc.nl

References

1. Danesh J, CRP CHD Genet Collaborat, Hingorani A, et al. Collaborative pooled analysis of data on C-reactive protein gene variants and coronary disease: judging causality by Mendelian randomisation. Eur J Epidemiol. 2008;23:531–40.
2. Niemiec P, Zak I, Wita K. The M235T polymorphism of the AGT gene modifies the risk of coronary artery disease associated with the presence of hypercholesterolemia. Eur J Epidemiol. 2008;23:349–54.
3. Mao RF, Fan YH, Chen F, et al. Genetic polymorphism of MTHFR G1793A in Chinese populations. Eur J Epidemiol. 2008;23:363–8.
4. Silva MCP, Janssens ACJW, Hofman A, et al. Apolipoprotein E gene is related to mortality only in normal weight individuals: The Rotterdam study. Eur J Epidemiol. 2008;23:135–42.
5. De Moor MHM, Stubbe JH, Boomsma DI, et al. Exercise participation and self-rated health: do common genes explain the association? Eur J Epidemiol. 2007;22:27–32.
6. Sabour S, Rutten A, van der Schouw YT, et al. Inter-scan reproducibility of coronary calcium measurement using multi detector-row computed tomography (MDCT). Eur J Epidemiol. 2007;22:235–43.
7. Danesh J, Saracci R, Berglund G, et al. EPIC-Heart: the cardiovascular component of a prospective study of nutritional, lifestyle and biological factors in 520, 000 middle-aged participants from 10 European countries. Eur J Epidemiol. 2007;22:129–41.
8. Psaty BM, O'Donnell CJ, Gudnason V, et al. Cohorts for heart and aging research in genomic epidemiology (CHARGE) consortium. Circ CVD Gen. 2009;2:73–80.

9. Dawber TR. The Framingham Study. The epidemiology of atherosclerotic disease. Cambridge: Harvard University Press; 1980.
10. Hofman A, Breteler MM, van Duijn CM. et al. The Rotterdam Study: objectives and design update. 2007;22:819–29.
11. Winkelmayer WC, Bucsics AE, Schautzer A, et al. Use of recommended medications after myocardial infarction in Austria. Eur J Epidemiol. 2008;23:153–62.
12. de Luise C, Lanes SF, Jacobsen J, et al. Cardiovascular and respiratory hospitalizations and mortality among users of tiotropium in Denmark. Eur J Epidemiol. 2007;22:267–72.
13. Spencer EA, Pirie KL, Stevens RJ, Beral V, Brown A, Liu B, et al. Diabetes and modifiable risk factors for cardiovascular disease: the prospective Million Women Study. Eur J Epidemiol. 2008;23:793–9.
14. Prugger C, Wellmann J, Heidrich J, Brand-Herrmann SM, Keil U. Cardiovascular risk factors and mortality in patients with coronary heart disease. Eur J Epidemiol. 2008;23:731–7.
15. Reuser M, Bonneux L, Willekens F. The burden of mortality of obesity at middle and old age is small. A life table analysis of the US Health and Retirement Survey. Eur J Epidemiol. 2008;23:601–7.
16. Andriankaja OM, Genco RJ, Dorn J, Dmochowski J, Hovey K, Falkner KL, et al. Periodontal disease and risk of myocardial infarction: the role of gender and smoking. Eur J Epidemiol. 2007;22:699–705.
17. Lawlor DA, Cooper AR, Bain C, et al. Associations of birth size and duration of breast feeding with cardiorespiratory fitness in childhood: findings from the Avon Longitudinal Study of Parents and Children (ALSPAC). Eur J Epidemiol. 2008;23:411–22.
18. Britton A, Malik M, Marmot M. The cardioprotective effects of alcohol consumption: does cardiac autonomic function play a role? Eur J Epidemiol. 2008;23:105–8.
19. Zatonski W, Campos H, Willett W. Rapid declines in coronary heart disease mortality in Eastern Europe are associated with increased consumption of oils rich in alpha-linolenic acid. Eur J Epidemiol. 2008;23:3–10.
20. Trichopoulou A, Bamia C, Norat T, et al. Modified Mediterranean diet and survival after myocardial infarction: the EPIC-Elderly study. Eur J Epidemiol. 2008;23:871–81.
21. Geleijnse JM, Witteman JCM, Stijnen T, et al. Sodium and potassium intake and risk of cardiovascular events and all-cause mortality: the Rotterdam Study. Eur J Epidemiol. 2007;22:763–70.
22. McFadden E, Luben R, Wareham N, et al. Occupational social class, educational level, smoking and body mass index, and cause-specific mortality in men and women: a prospective study in the European Prospective Investigation of Cancer and Nutrition in Norfolk (EPIC-Norfolk) cohort. Eur J Epidemiol. 2008;23:511–22.
23. Laszlo KD, Janszky I, Ahnve S. Income and recurrent events after a coronary event in women. Eur J Epidemiol. 2008;23:669–80.
24. Lawlor DA, Batty GD, Clark H, et al. Association of childhood intelligence with risk of coronary heart disease and stroke: findings from the Aberdeen Children of the 1950s cohort study. Eur J Epidemiol. 2008;23:695–906.
25. McFadden E, Luben R, Wareham N, et al. Occupational social class, risk factors and cardiovascular disease incidence in men and women: a prospective study in the European Prospective Investigation of Cancer and Nutrition in Norfolk (EPIC-Norfolk) cohort. Eur J Epidemiol. 2008;23:449–58.
26. Hyyppa MT, Maki J, Impivaara O, et al. Individual-level measures of social capital as predictors of all-cause and cardiovascular mortality: a population-based prospective study of men and women in Finland. Eur J Epidemiol. 2007;22:589–97.
27. Koupil I, Shestov DB, Sparen P, et al. Blood pressure, hypertension and mortality from circulatory disease in men and women who survived the siege of Leningrad. Eur J Epidemiol. 2007;22:223–34.
28. Smith LV, Borch-Johnsen K, Jorgensen T. Commuting physical activity is favourably associated with biological risk factors for cardiovascular disease. Eur J Epidemiol. 2007;22:771–9.
29. Rzehak P, Meisinger C, Woelke G, et al. Weight change, weight cycling and mortality in the ERFORT male cohort study. Eur J Epidemiol. 2007;22:665–73.
30. Filardo G, Hamilton C. Modeling the effects of body mass index and waist-to-hip ratio on mortality. Eur J Epidemiol. 2007;22:745–6.
31. Lagerros YT, Lagiou P. Assessment of physical activity and energy expenditure in epidemiological research of chronic diseases. Eur J Epidemiol. 2007;22:353–62.
32. Aadahl M, Kjaer M, Jorgensen T. Associations between overall physical activity level and cardiovascular risk factors in an adult population. Eur J Epidemiol. 2007;22:369–78.
33. Orsini N, Bellocco R, Bottai M, Pagano M, Wolk A. Reproducibility of the past year and historical self-administered total physical activity questionnaire among older women. Eur J Epidemiol. 2007;22(6):363–8.
34. Orsini N, Bellocco R, Bottai M, Hagströmer M, Sjöström M, Pagano M, et al. Validity of self-reported total physical activity questionnaire among older women. Eur J Epidemiol. 2008;23(10):661–7.
35. Matthiessen J, Biltoft-Jensen A, Rasmussen LB, Hels O, Fagt S, Groth MV. Comparison of the Danish Physical Activity Questionnaire with a validated position and motion instrument. Eur J Epidemiol. 2008;23:311–22.
36. Graff-Iversen S, Anderssen SA, Holme IM, Jenum AK, Raastad T. Two short questionnaires on leisure-time physical activity compared with serum lipids, anthropometric measurements and aerobic power in a suburban population from Oslo, Norway. Eur J Epidemiol. 2008;23:167–74.
37. Thelle DS. Assessment of physical activity and energy expenditure in epidemiological studies. Eur J Epidemiol. 2007;22:351–2.
38. Gemes K, Ahnve S, Janszky I. Inflammation a possible link between economical stress and coronary heart disease. Eur J Epidemiol. 2008;23:95–103.
39. The Emerging Risk Factors Collaboration. Analysis of individual data on lipid, inflammatory and other markers in over 1.1 million participants in 104 prospective studies of cardiovascular diseases. Eur J Epidemiol. 2007;22:839–69.
40. Pischon T, Mohlig M, Hoffmann K, et al. Comparison of relative and attributable risk of myocardial infarction and stroke according to C-reactive protein and low-density lipoprotein cholesterol levels. Eur J Epidemiol. 2007;22:429–38.
41. Pekkanen J, Sunyer J. Problems in using incidence to analyze risk factors in follow-up studies. Eur J Epidemiol. 2008;23:581–4.
42. Hernandez-Diaz S, Wilcox AJ, Schisterman EF, et al. From causal diagrams to birth weight-specific curves of infant mortality. Epidemiology. 2008;23:163–6.
43. Ekman A, Litton JE. New times, new needs; e-epidemiology. Eur J Epidemiol. 2007;22:285–92.
44. Casiglia E, Schiavon L, Tikhonoff V, Bascelli A, Martini B, Mazza A, et al. Electrocardiographic criteria of left ventricular hypertrophy in general population. Eur J Epidemiol. 2008;23:261–71.
45. Stang A. Appropriate epidemiologic methods as a prerequisite for valid study results. Eur J Epidemiol. 2008;23:761–5.
46. Thelle DS. The dynamics of cardiovascular epidemiology. Eur J Epidemiol. 2009. doi:10.1007/s10654-009-9407-y.
47. Hedlund E, Pehrsson K, Lange A, et al. Country of birth and survival after a first myocardial infarction in Stockholm, Sweden. Epidemiology. 2008;23:341–7.

48. Koek HL, Soedamah-Muthu SS, Kardaun JWPF, et al. Short- and long-term mortality after acute myocardial infarction: comparison of patients with and without diabetes mellitus. Eur J Epidemiol. 2007;22:883–8.
49. Menotti A, Lanti M, Kromhout D, et al. Forty-year coronary mortality trends and changes in major risk factors in the first 10 years of follow-up in the seven countries study. Eur J Epidemiol. 2007;22:747–54.
50. Koek HL, Kardaun JWPF, Gevers E, et al. Acute myocardial infarction incidence and hospital mortality: routinely collected national data versus linkage of national registers. Eur J Epidemiol. 2007;22:755–62.
51. Icks A, Moebus S, Feuersenger A, et al. Widening of a social gradient in obesity risk? German national health surveys 1990 and 1998. Eur J Epidemiol. 2007;22:685–90.
52. Hedlund E, Lange A, Hammar N. Acute myocardial infarction incidence in immigrants to Sweden. Country of birth, time since immigration, and time trends over 20 years. Eur J Epidemiol. 2007;22:493–503.
53. Kabir Z, Bennett K, Critchley JA, et al. Can small changes in cardiovascular risk factors predict large future reductions in coronary heart disease mortality in Ireland? Eur J Epidemiol. 2007;22:83–9.
54. Schwingel A, Nakata Y, Ito LS, et al. Lower HDL-cholesterol among healthy middle-aged Japanese-Brazilians in Sao Paulo compared to Natives and Japanese-Brazilians in Japan. Eur J Epidemiol. 2007;22:33–42.
55. Dramé M, Novella JL, Lang PO, Somme D, Jovenin N, Lanièce I, et al. Derivation and validation of a mortality-risk index from a cohort of frail elderly patients hospitalised in medical wards via emergencies: the SAFES study. Eur J Epidemiol. 2008;23:783–91.
56. Jacobsen R, Oksuzyan A, Engberg H, Jeune B, Vaupel JW, Christensen K. Sex differential in mortality trends of old-aged Danes: a nation wide study of age, period and cohort effects. Eur J Epidemiol. 2008;23:723–30.
57. Wong A. Incident solar radiation and coronary heart disease mortality rates in Europe. Eur J Epidemiol. 2008;23:609–14.
58. Keys A. Seven countires. A multivariate analysis of death and coronary disease. Cambridge: Harvard University Press; 1980.