A Survey of GPs Awareness and Use of Risk Assessment Tools and Cardiovascular Disease Prevention Guidelines

Abstract:

D Byrne[1], L O'Connor[2], S Jennings[2], K Bennett[3], AW Murphy[4]
[1]Glanmire Medical Centre, Co Cork
[2]Department of Public Health, Dr Steevens Hospital, Dublin 8
[3]National Centre for Pharmacoeconomics, St Jamesâ s Hospital, Dublin 8
[4]Department of General Practice, NUI, Galway

Abstract

Cardiovascular disease (CVD) is the leading cause of death worldwide. This study aimed to benchmark awareness and use of CVD risk assessment (RA) tools and prevention guidelines in Irish general practice. 493 (18%) Irish general practitioners (GPs) were invited to participate in a cross-sectional study in 2011. 213 (43%) GPs responded with most being male (n= 128, 58.2%) and aged e45 years (n=124, 56.8%). While 197 (92.5%) GPs were aware of at least one RA tool, only 69 (32.4%) GPs reported frequent use. 187 (87.8%) GPs were aware of one or more CVD prevention guidelines with 115 (54.0%) GPs reporting frequent use of at least one guideline. No age or gender difference observed. Barriers to implementation of CVD prevention guidelines were lack of remuneration, too many CVD guidelines and time constraints. Most Irish GPs were aware of RA tools and CVD prevention guidelines with half reporting frequent use of guidelines.

Introduction

Cardiovascular disease (CVD) remains the leading cause of death throughout the world including Europe.[1] Although the major risk factors for CVD are well established, the continuing high prevalence of cardiovascular disease may be due to insufficient knowledge and application of evidence based CVD prevention guidelines among primary care physicians and general practitioners (GPs).[2] To successfully implement CVD prevention guidelines it is important to identify patients who are at high risk of developing the disease. Identification of high risk patients is aided by the use of standardised risk assessment (RA) tools for cardiovascular disease which take into account risk factors such as age, sex, systolic blood pressure, total cholesterol and smoking status in estimating the 10 year percentage risk of a patient having cardiovascular event or death.[3,4] The SLAN 07 study found that a significant proportion of Irish people at high risk remain unidentified with 34% and 62% respectively unaware of having raised blood pressure and raised cholesterol.[5] While European studies have documented the level of knowledge and use of risk assessment and guidelines[6-9] there is no data for Irish GPs. Consequently the Irish Heart Foundationâ s Council on Prevention undertook a baseline study as part of addressing the implementation of the European Society of Cardiology guidelines on CVD Prevention in Clinical Practice in Ireland. The aim of this study was to benchmark the awareness and use of RA tools and CVD prevention guidelines along with barriers to their use among a sample of Irish GPs.

Methods

GPs (n= 493) in one region of the Health Services Executive (HSE) in Ireland, were invited to participate in this descriptive, cross sectional study in May 2011. Approximately 18% of Irish GPs were included. The sampling frame was the list of GPs making claims for services to patients. A study instrument was developed, piloted and mailed to GPs with one reminder sent. The instrument employed 19 questions in four domains: demography, risk assessment, CVD guideline use and the perception of barriers to use of RA tools and CVD guidelines. Data entry was quality assured, with analysis undertaken using SPSS version 21. Potential barriers to risk assessment, implementation of CVD prevention guidelines and optimal management of CVD risk were captured by asking respondents to rate a series of statements using a 5-point Likert scale. The study instrument was informed by questions made available to us, with permission, by the authors of the EUREKA and REACT studies. Age was analysed in two age groups (< 45 years & e45 years). Missing data was < 7% for the main data items. The study was approved by the ICGP Ethics committee.

Results

Demography

In total, 213 GPs responded to the survey giving a response rate of 43%. Most respondents were male (58.2%), aged 45 years and over (56.8%) (Table 1).

Risk Assessment tools - awareness and use

Almost all respondents (92.5%) were aware of at least one RA tool with no significant association with age or gender (Table 2). However, only a third of GPs frequently used RA tools (32.4%) with no significant difference between gender (X2 =0.45, p=0.50) or age <45 years (v) e45 years (X2 =1.27, p=0.26). There was a higher awareness (94.9% v 60.0%, p<0.001), but no difference in frequent use (34.9% v 37.5%, p=0.88), of RA tools among practitioners who had practice management software compared to those who had none (Table 1). Practice size was not associated with greater use of RA tools (p=0.32). The RA tool most used was the SCORE calculator either exclusively (39.0%), or as one of a number of calculators used (45.5%). 32.4% of respondents used CVD risk calculation frequently while another 40.4% used it occasionally. Reasons cited for using CVD risk calculation were: to motivate patient lifestyle change (66.7%), to educate the patient about risk (64.8%), to help decide who to treat with medication (59.6%) and to help decide treatment goals (28.6%).

CVD Prevention Guidelines in General Practice â   awareness and use

Most GPs (87.8%) were aware of one or more CVD prevention guidelines with no age or gender difference. (Table 2) However, self-reported frequent use of at least one of these guidelines was lower at 54.0% with no statistical difference between age groups (X2= 0.26, p=0.61) or across gender (X2= 0.53, p= 0.47). Practice size and use of practice management software were not associated with differing use of CVD prevention guidelines. The CVD prevention guidelines most frequently used were NICE (32.4%) followed by the European Society of Cardiology (ESC) (29.6%).

Barriers

The top three barriers to use of RA tools were cited as 1) patients focused on a single risk factor and not global picture (32.9%) 2) time constraints (30.6%) and 3) not used to using a risk calculator (18.4%). Barriers to implementation of CVD prevention guidelines cited by GPs included; lack of remuneration (40.8%), too many CVD guidelines (38.9%) and time constraints (35.7%) (Figure 1). Similar barriers were identified by both genders and both age groups. Optimal management of CVD risk in patients was found to be hampered by lack of patient compliance (42.2%), number of drugs needed to adequately control blood pressure (40.3%), cost of medication (36.1%) and the presence of co-morbid conditions (33.3%) (Figure 2).

Discussion

More than 90% of GPs who responded were aware of at least one RA tool and of at least one or more CVD guideline, though less than a third of GPs frequently used RA tools and just over half regularly used CVD guidelines in their daily practice. These results were consistent in both sexes and both age groups. GPs with practice management software were more aware of RA tools but no more likely to use them than colleagues without software. Neither practice size nor the use of practice management software had an impact on the awareness or use of CVD guidelines. Barriers to use of RA tools and CVD guidelines included; patients focused on single risk factor, time constraints, lack of remuneration and too many guidelines. GPs cited patient compliance, number of medications required and medications costs as major barriers to optimal management of CVD risk in patients. While awareness of RA tools and CVD guidelines is very high in our survey, regular use was much lower. Similar results were reported in the USA where more than 90% of family physicians and cardiologists were aware of two out of three CVD prevention guidelines identified but only 50% incorporated the guidelines into their practice.[2] The use of RA tools varied internationally. Our report that 32.4% of GPs frequently used a RA tool in 2011 is an increase on the finding of 13% regular use in a multicentre survey of GPs in 2001.[8] While higher levels of use (53%) were documented in Spain and in the multi-country EURIKA study (69%) both studies included a mix of hospital specialists and family physicians.[7,9] The frequent use of CVD guidelines in our study of GPs (54%) appears at the lower end of a range when compared with international studies - the REACT study of 2001 reported 60% moderate use of CVD guidelines[9] and later a large multicentred European study showed that any guideline use varied from 60-97% across 6 countries.[8] More recently, another multi-centred trial found that 85% of hospital physicians and family doctors reported using at least one CVD guideline.[7] However, German (~50%) and Swiss (23%) studies had much lower rates of guideline use.[6,11]

Age of practitioner was not a significant factor in awareness or use of RA tools or CVD guidelines in our study in contrast to an American report which identified that guideline adherence was inversely proportional to the number of years the physician had been in practice.[2] It is possible that the division of age of physician into two age groups in our study may have masked a similar result. Also our study did not include GP registrars or GPs who do not receive payment for services from the HSE, who are likely to be younger. We found that gender was not a significant factor in awareness or use of RA tools or CVD guidelines and we point to the dearth of published literature on gender disparity in practice. While the presence of practice management software did not influence results in our study, the development and incorporation of relevant software tools into existing packages may be important. This was demonstrated in a New Zealand study that found the addition of system changes to primary care management software dramatically increased cardiovascular risk assessment rates and facilitated targeted intensive cardiovascular prevention measures in primary care.[12] These system changes included identification of patients eligible for cardiovascular screening and RA tools.[12] Time constraints were identified as a barrier to RA tool and CVD guideline use in this study and in studies internationally. While lack of remuneration is identified as the most common barrier to CVD guideline use (40.8%) among Irish GPs, this barrier is not as dominant in multi-country studies such as REACT or EURIKA.[7,9] While this may reflect the population of physicians studied or the year of the study, it may also point towards different payment structures for primary care services across Europe or financial incentives to GPs who achieve key results in patient management such as the Quality and Outcome Framework in the UK.13 The existence of too many CVD guidelines was also mentioned as a significant barrier to CVD guideline use in Ireland as in other European countries.[7,9] Another important barrier identified in the study is patient compliance. This barrier is multi-factorial and is well-recognised in previous studies.[2,6-10]

A strength of this study is that this data was collected in an Irish setting. The structure of general practice in Ireland is unique and consequently it can be difficult to translate international results to the Irish setting. While 43% may be considered a limitation, achieving higher response rates is known to be difficult in GP surveys with similar surveys yielding response rates of 32-49%.[11,14] Significant attempts to improve the response rate included attention to questionnaire design and layout, piloting of questionnaires and sending second questionnaires.[15] Lastly the actual number of GPs responding (n= 213) in our study is higher than the number in individual countries participating in multicentre surveys (range 30 â 150). The self-reporting nature of the questionnaire by GPs with lack of validation is recognised as a limitation of the study. Furthermore as the questionnaire was anonymous we are unable to characterise non-responders. Awareness of RA tools and CVD guidelines is high among Irish GPS but their use is much lower. Our study has identified a number of barriers to use of these tools. These barriers are similar to those documented in previous studies suggesting that these barriers are universal. Solutions must be identified to overcome these barriers. The development of time-efficient tools to assist in the CVD risk assessment consultation is important. Continuous medical education sessions illustrating the benefits of RA tools and guidelines and techniques to improve patient compliance should be introduced. Further formalisation and incentivising of chronic disease management should be considered to encourage CVD risk assessment of all patients and appropriate evidence-based management of identified risk factors.

Correspondence: D Byrne
Glanmire Medical Centre, Glanmire, Co Cork
Email: dbyrne79@yahoo.com

References

1. Bonow RO, Smaha LA, Smith SC, Mensah GA, Lenfant C. World Heart Day 2002: the international burden of cardiovascular disease: responding to the emerging global epidemic. Circulation. 2002;106:1602-5.

2. Doroodchi H, Abdolrasulnia M, Foster JA, Foster E, Turakhia MP, Skelding KA, Sagar K, Casebeer LL. Knowledge and attitudes of primary care physicians in the management of patients at risk for cardiovascular events. BMC Family Practice. 2008;9:42.

3. University of Edinburgh. Cardiovascular Risk Calculator and Chart 2005 [cited 2013 December 31st 2013]. Available from: http://cvrisk.mvm.ed.ac.uk/calculator/framingham.htm.

4. Conroy RM, Pyˆ¶rˆ/lˆ/ K, Fitzgerald AP, Sans S, Menotti A, De Backer G, De Bacquer D, Ducimetiˆ¤re P, Jousilahti P, Keil U, Njˆ,lstad I, Oganov RG, Thomsen T, Tunstall-Pedoe H, Tverdal A, Wedel H, Whincup P, Wilhelmsen L, Graham IM. Estimation of ten-year risk of fatal cardiovascular disease in Europe: the SCORE project. Eur Heart J. 2003;24:987-1003.

5. Morgan K, McGee H, Watson D, Perry I, Barry M, Shelley E, Harrington J, Molcho M, Layte R, Tully N, van Lente E, Ward M, Lutomski J, Conroy R, Brugha R. SLAN 2007: Survey of Lifestyle, Attitudes and Nutrition in Ireland. Main Report. Dublin: Department of Health and Children, 2008.

6. Hobbs F, Jukema J, Da Silva P, McCormack T, Catapano A. Barriers to cardiovascular disease risk scoring and primary prevention in Europe. QJM. 2010;103:727-39.

7. Dallongeville J, Banegas JR, Tubach F, Guallar E, Borghi C, De Backer G, Halcox JPJ, Massˆ‡-Gonzˆ¡lez EL, Perk J, Sazova O, Steg PG, Artalejo FR. Survey of physiciansâ practices in the control of cardiovascular risk factors: the EURIKA study. European journal of preventive cardiology. 2012;19:541-50.

8. Graham IM, Stewart M, Hertog MG. Factors impeding the implementation of cardiovascular prevention guidelines: findings from a survey conducted by the European Society of Cardiology. European Journal of Cardiovascular Prevention & Rehabilitation. 2006;13:839-45.

9. Hobbs FR, Erhardt L. Acceptance of guideline recommendations and perceived implementation of coronary heart disease prevention among primary care physicians in five European countries: the Reassessing European Attitudes about Cardiovascular Treatment (REACT) survey. Family Practice. 2002;19:596-604.

10. Mosca L, Linfante AH, Benjamin EJ, Berra K, Hayes SN, Walsh BW, Fabunmi RP, Kwan J, Mills T, Simpson SL. National study of physician awareness and adherence to cardiovascular disease prevention guidelines. Circulation.

2005;111:499-510.

11. Eichler K, Zoller M, Tschudi P, Steurer J. Barriers to apply cardiovascular prediction rules in primary care: a postal survey. BMC family practice. 2007;8:1.

12. Sinclair G, Kerr A. The Bold Promise Project: a system change in primary care to support cardiovascular risk screening in New Zealand. NZ Med J. 2006;119:2312.

13. National Institute for Healthcare Excellence. Quality and Outcome Framework 2013 [cited 2014 January 31st]. Available from: http://www.nice.org.uk/aboutnice/qof/qof.jsp.

14. De Muylder R, Lorant V, Paulus D, Nackers F, Jeanjean M, Boland B. Obstacles to cardiovascular prevention in general practice. Acta cardiologica. 2004;59:119.

15. Edwards P, Roberts I, Clarke M, DiGuiseppi C, Pratap S, Wentz R, Kwan I. Increasing response rates to postal questionnaires: systematic review. BMJ. 2002;324:1183.