Clinicians’ preferences for treatments to prevent coronary heart disease: a postal survey

S Bryan, P Gill, S Greenfield, K Gutridge, T Marshall, Birmingham Patient Preferences Group

The decision to offer treatment to prevent coronary heart disease weighs up the benefits of treatment against the disadvantages of treatment. The benefits of treatment are the product of the relative risk of treatment and pre-treatment risk. Relative risk is approximately 0.7 for both aspirin and statins. As adverse effects are infrequent, the principal disadvantages of treatment are medicalisation and inconvenience.

Previous research on clinicians’ preferences for preventive treatments had a number of weaknesses. Clinicians were asked to decide on their own behalf rather than for their patients. Outcome was expressed only as improvement in mortality, ignoring non-fatal outcomes. Stating only reductions in negative outcomes (loss framing) is likely to increase mortality, ignoring non-fatal outcomes. Stating only reductions in negative outcomes (loss framing) is likely to increase mortality, ignoring non-fatal outcomes. Stating only reductions in negative outcomes (loss framing) is likely to increase mortality, ignoring non-fatal outcomes. Stating only reductions in negative outcomes (loss framing) is likely to increase mortality, ignoring non-fatal outcomes.

To mitigate framing effects, coronary risk was presented both as the number of persons per 100 who would have a coronary event in the next five years, and the number who would not have a coronary event in the next five years. The numbers were stated twice, indicating the numbers affected by each outcome with and without treatment. Participants were randomly allocated to each of two counterbalanced booklets, one presenting scenarios in descending order of coronary risk, the other in ascending order.

At the end of each booklet, two questions tested participants’ comprehension of the numerical risk information. Participants were asked to choose between two otherwise identical treatments that reduced coronary risk by different amounts. Participants who chose the more effective treatment were judged to have understood the numerical information.

Data were entered into SPSS 11.0 and the relationship between thresholds and professional group was investigated by Mann-Whitney U test. Relations between treatment thresholds, the order in which risk scenarios were presented, and participant comprehension were investigated as secondary hypotheses.

RESULTS

Questionnaires were sent to 775 clinicians. Of these, 70 were confirmed as having retired, died or moved away, and four practice nurses indicated that the questionnaire was not applicable to them. The overall response rate was 42% (296 of

### Table 1  Thresholds at which treatment is recommended by different groups of clinicians

<table>
<thead>
<tr>
<th>Lowest 5 year coronary risk at which treatment is recommended*</th>
<th>Number (%) choosing this threshold</th>
<th>Grouped by profession</th>
<th>Grouped by comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cardiologists</td>
<td>General practitioners</td>
<td>Practice nurses</td>
</tr>
<tr>
<td>3%</td>
<td>3 (7%)</td>
<td>29 (15%)</td>
<td>10 (16%)</td>
</tr>
<tr>
<td>6%</td>
<td>1 (2%)</td>
<td>9 (5%)</td>
<td>10 (16%)</td>
</tr>
<tr>
<td>10%</td>
<td>14 (33%)</td>
<td>38 (20%)</td>
<td>8 (13%)</td>
</tr>
<tr>
<td>15%</td>
<td>18 (42%)</td>
<td>60 (31%)</td>
<td>17 (28%)</td>
</tr>
<tr>
<td>20%</td>
<td>5 (12%)</td>
<td>22 (11%)</td>
<td>7 (11%)</td>
</tr>
<tr>
<td>30%</td>
<td>2 (5%)</td>
<td>25 (13%)</td>
<td>5 (8%)</td>
</tr>
<tr>
<td>Not recommended at 30%</td>
<td>0 (0%)</td>
<td>9 (5%)</td>
<td>4 (7%)</td>
</tr>
<tr>
<td>Total</td>
<td>43 (100%)</td>
<td>192 (100%)</td>
<td>61 (100%)</td>
</tr>
</tbody>
</table>

*Approximately equivalent to reductions in 5 year coronary risk of 1%, 2%, 3%, 4.5%, 7%, 9% and >9%, respectively.

www.heartjnl.com
DISCUSSION

Despite low response rates from general practitioners, response rates are comparable to those achieved in a similar postal survey.\(^1\) Significant numbers of non-specialist clinicians, a quarter of nurses and one in 20 general practitioners, failed to understand the risk information and were more likely to offer treatment. Our survey may underestimate failures of comprehension as participants who felt they understood the risk information were more likely to offer treatment.\(^3\) We found similar median coronary risk thresholds across different professional groups.\(^3\)

The median risk threshold was 6% for respondents who answered both comprehension questions correctly and 15% for those who did not.\(^4\) There was considerable variation in the risk thresholds at which clinicians would offer treatment. Fourteen per cent (42/296) would offer treatment to patients at 3% five year coronary risk. Four per cent (13/296) of respondents would not offer treatment to patients at even a 30% five year coronary risk. The median treatment threshold was 15% five year coronary risk (equivalent to 4.5% absolute reduction in risk). For all three professional groups, both modal and median thresholds for treatment were 15% five year risk (equivalent to 4.5% absolute reduction in risk). Differences in median responses between professional groups were not significant by Kruskal-Wallis H test (table 1).

Exclusion of respondents who failed to answer both comprehension questions correctly did not affect the median responses. Modal and median treatment thresholds were the same in participants presented with scenarios in descending and ascending order of coronary risk.

In conclusion, there is no consensus among clinicians on a treatment threshold at which to offer preventive treatment. Guidance provided to patients is therefore arbitrary. The extent and implications of poor understanding of risk among clinicians merits further investigation.

**Authors’ affiliations**

S Bryan, Health Services Management Centre, University of Birmingham, Birmingham, UK

P Gill, S Greenfield, Department of Primary Care and General Practice, University of Birmingham

K Guttridge, T Marshall, Department of Public Health & Epidemiology, University of Birmingham

The research was funded by a grant from the Medical Research Council (G0001097). Additional support was provided by the Primary Care Clinical Research and Trials Unit, University of Birmingham. Acknowledgements are due to all the clinicians and other primary care staff who took part in this study, gave their time or made it possible.

Correspondence to: Dr Tom Marshall, Department of Public Health & Epidemiology, University of Birmingham, Edgbaston, Birmingham B15 2TT, UK; t.p.marshall@bham.ac.uk

Accepted 7 June 2004

**REFERENCES**


**WEB TOP 10**

www.heartjnl.com

These articles scored the most hits on Heart’s website during December 2004

1. Investigation and management of chest pain

   K F Fox

   January 2005;91:105–10. (Education in Heart)

2. Catheter ablation for atrial fibrillation

   P Jais, P Sanders, L F Hsu, M Hocini, M Haissaguerre

   January 2005;91:7–9. (Editorial)

3. Theory and practice of defibrillation: (1) Atrial fibrillation and DC conversion

   A A J Adgey, S J Walsh

   December 2004;90:1493–8. (Education in Heart)

4. Tissue Doppler, strain, and strain rate echocardiography for the assessment of left and right systolic ventricular function

   D Pellerin, R Sharma, P Elliott, C Veyrat

   November 2003;89(suppl II):II9–17. (Supplement)

5. Management of hypertension before, during, and after pregnancy

   P R James, C Nelson-Piercy

   December 2004;90:1499–504. (Education in Heart)

6. Should ablation be the first line treatment for supraventricular arrhythmias?

   F G Cosio

   January 2005;91:5–6. (Editorial)

7. Clinical assessment of myocardial hibernation

   A F L Schinkel, J J Bax, D Poldermans

   January 2005;91:111–17. (Education in Heart)

8. Joint British recommendations on prevention of coronary heart disease in clinical practice


   K A A Fox

   June 2004;90:698–706. (Education in Heart)

10. Pathologic assessment of the vulnerable human coronary plaque

    F D Kolodgie, R Virmani, A P Burke, A Farb, D K Weber, R Kutz, A V Finn, H K Gold

    December 2004;90:1385–91. (Mini-symposium)

Visit the Heart website for hyperlinks to these articles, by clicking on “Top 10 papers”

www.heartjnl.com
Clinicians' preferences for treatments to prevent coronary heart disease: a postal survey

S Bryan, P Gill, S Greenfield, K Guttridge and T Marshall

*Heart* 2005 91: 377-378
doi: 10.1136/hrt.2004.035196

Updated information and services can be found at:
http://heart.bmj.com/content/91/3/377

**These include:**

**References**
This article cites 4 articles, 4 of which you can access for free at:
http://heart.bmj.com/content/91/3/377#BBL

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Topic Collections**
Articles on similar topics can be found in the following collections

- Drugs: cardiovascular system (8839)
- Epidemiology (3775)

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/