Author's declarative title: Long term impact of screening for type 2 diabetes mellitus - a commentary on new evidence.

Citation: Echouffo-Tcheugui JB, et al. Long-term effect of population screening for diabetes on cardiovascular morbidity, self-rated health and health behaviour.

Commentary

Context

Despite fulfilling many of the criteria for a screening programme, population-based screening for Type 2 diabetes (T2DM) continues to be the focus of debate,[1-3] chiefly concerning the balance of benefits against harms. This paper contributes by analysing the long-term impact of a single round of population-based screening on three key outcomes: 1) cardiovascular morbidity – which modelling data suggests could be reduced by screening; 2) self-rated health – an independent predictor of morbidity and mortality; and 3) health-related behaviour – particularly the potential for continued engagement in 'unhealthy' behaviours from false reassurance following a negative screening test. This paper addresses the need for evidence form trials on the long term effects.

Methods

This paper reports on a questionnaire study nested within a parallel-group, cluster randomised controlled trial of T2DM screening and treatment (ADDITION Cambridge[4]). The screening strategy applied a risk score to practice registers to identify those most at risk, and invited them to attend for stepwise screening. In the nested study questionnaire were posted to a computer-generated random sample of those invited to the original screening in 27 intervention and 5 control practices (of 63 trial practices), 7 years after practice randomisation. Questionnaire items assessed: experience of cardiovascular disease events and prescription of cardioprotective medication; self-rated health status and health utility; and health-related behaviours over the preceding 3 months (physical activity, diet, smoking, alcohol and health service use). Analysis was principally by intention to screen. Primary comparison was between the screening group and the non-screening controls; additional analyses compared sub-groups: screening attenders with non-attenders, and attenders who screened negative with controls.

Results

A response rate of 62% and 53% for screening and control groups respectively yielded a sample of 1373 and 572; 152 of the screening group were non-attenders. Analyses found no significant differences at 7 years between the screening and control groups in the proportion reporting cardiovascular disease, hypertension, or prescription of antihypertensives or glucose lowering medication; self-rated health (SF-8); health utility (EQ-5D); current smoking status, alcohol consumption, physical activity, dietary patterns; or patterns of health service use. No significant differences were found for any health-related behaviour, between attenders who screened negative and non-screening controls, and between screening attenders and non-attenders.

Commentary

This study is the first to assess long-term population-level effects of screening for T2DM and, addressing a criticism of previous studies, it includes non-screening controls. The findings confirm, and extend (by adding long-term data), the argument that population screening for T2DM is not associated with any direct or indirect adverse impact. [5,6] Being invited to the screening was associated with no detrimental impact on self-rated health status or health utility, and there was no evidence of false reassurance in the form of increased 'unhealthy' behaviours following receipt of a negative screening test result.

Concerning benefits to *population-level* cardiovascular morbidity the findings indicate neither a significant reduction in self-reported cardiovascular morbidity nor a significant positive change to health-related behaviour. The analysis differed, however, from previous studies by assessing cardiovascular morbidity in all those invited for screening, rather than those with screen-detected T2DM only; the latter group made up just 2.9% of those eligible for screening in the wider trial. The authors note potential contextual influences in UK primary care on population levels of cardiovascular morbidity; i.e. improved detection and management of cardiovascular risk factors through the introduction of pay-for-performance remuneration and recommendations for opportunistic and systematic screening initiatives.

One limitation, acknowledged by the authors, concerns generalizability; ethnic diversity and levels of deprivation in the study population (East of England) are quite different from other regions of the UK, and these factors can influence the acceptability and uptake of screening.

Implications for practice

This study provides no evidence for a change in practice; the findings confirm the position that population-level screening for T2DM has no adverse impact. Rather, concerning the question of population-level benefits, the authors add their support to the call for further research into the cost-effectiveness of such screening.

References

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