UK National Screening Committee

Optimising bowel screening: Policy implications for the UK

Aim

1. To publicly consult on whether the evidence presented supports a change to the current tests approved for use in bowel screening programmes. In particular whether an optimal bowel screening programme should use both flexible sigmoidoscopy *and* Faecal Immunochemical Test (FIT).

Current position

2. The UK National Screening Committee (UK NSC) recommended the use of biennial testing for small amounts of blood in faeces in 2003 to men and women aged 50-74 using the guaiac faecal occult blood test (gFOBT).

3. In 2011 the UK NSC also examined the case for using flexible sigmoidoscopy (FS) as a screening modality. It found that it is a cost effective test and recommended its use. https://legacyscreening.phe.org.uk/bowelcancer

4. In 2015 the UK NSC examined the evidence for using a more sensitive Faecal Immunochemical Test (FIT). It found that it is a cost effective test and recommended its use as a replacement for gFOBT. https://legacyscreening.phe.org.uk/bowelcancer

5. Implementation of gFOBT and FS has been different across the UK.

Background

6. Biennial screening and follow up has been shown to reduce deaths from bowel cancer. The use of the gFOBT to screen for the presence of blood in faeces with those with positive tests receiving colonoscopy, reduced deaths by 16% in four large randomised trials[1]. Four studies have also demonstrated that in an average risk population, direct examination of the left side of the colon and rectum with a flexible sigmoidoscopy can also reduce both colorectal cancer incidence and deaths[2-5]. gFOBT and flexible sigmoidoscopy screening (also known as bowel scope (BS)) are currently in use and cost effective (https://legacyscreening.phe.org.uk/bowelcancer)

7. Both these screening modalities require significant amounts of highly trained people, clinic and hospital time and space. With the advent of a new and more sensitive test for blood in stool (FIT) and a limited expert workforce capable of performing high quality colonoscopy and BS it was timely to carry out further work to ascertain the best combination of tests.

8. Crucially, FIT can measure the amount of blood in the stool (unlike gFOBT which just detects its presence not quantity). As the amount of blood used for defining a positive (abnormal) test result falls, the sensitivity increases, and the number of cancers found increases. Of

course, this comes at the cost of an increasing number of abnormal tests which in turn increases the requirement for colonoscopy.

9. As FIT and BS have not been offered in combination in a research setting the UK NSC commissioned the Sheffield school of Health and Related Research (ScHARR) to develop a disease model and test some screening scenarios to see which would deliver the most cost effective bowel screening programme. The model deliberately used QALYs (quality adjusted life years) as the outcome and used a variety of colonoscopy capacity constraints.

10. The results of the ScHARR analysis accompany this document. It is a complex document and its conclusions have been revised by ScHARR following further analysis and detailed discussions with and reviews by relevant experts in the UK NSC as well as commissioners, nurses and doctors from the NHS.

Conclusions

11. The conclusions of the ScHARR analysis are that FIT is a cost effective test to use in the bowel screening programme. The ideal is to start at 50/51 years and to set the sensitivity of the FIT test as high as possible (i.e. at as low a threshold as possible) to use the maximum available colonoscopy capacity. The FIT data from the Bowel Cancer Screening Programme (BCSP) pilot (https://legacyscreening.phe.org.uk/bowelcancer) is based on only one screening cycle, but simulates various scenarios in which the starting and stopping age and screening interval are changed.

12. The place of BS in the programme is more nuanced. There is no doubt it is a highly effective way to screen, detect and prevent cancers and is cost effective at usual NICE thresholds. This means we are now in the enviable position of having another cost effective modality (FIT) with which to compare and/or combine.

13. But critical to the model assumptions and subsequent policy recommendations is that detection rates and uptake achieved in the trial have not been seen in the English Bowel Cancer Screening programme thus far. There is uncertainty as to whether BS uptake and detection rates can be increased to the levels reported in the trial, and hence trial reported effectiveness achieved.

14. The ScHARR analysis presents us with several conclusions. In essence these depend on colonoscopy capacity. The ideal combination changes as improvements are made in the uptake and quality of BS and the uptake and sensitivity of FIT.

Examples

15. For FIT at a threshold of 120 ug/g delivered every two years to people aged 50-74, replacement of the FIT test with a bowel scope at age 58 *reduced* the cost effectiveness (assuming the uptake and detection rates currently in the Bowel Cancer Screening programme are applied to 58 year olds).

16. If, on the other hand, we assume detection rates as in the UK Flexible Sigmoidoscopy Screening Trial (UKFSST) and higher uptake (55%) cost effectiveness *increases*.

17. However, as FIT sensitivity is increased and (by implication) more colonoscopy becomes available, by the time FIT can be offered at a threshold of 93 ug/g every two years to 50-74 year olds *even trial quality BS is not a cost effective addition*.

Implications for UK NSC recommendations

18. While BS can be effective and cost effective in combination with FIT thresholds above 95 ug/g, it must be done to very high quality (as in the trial). However if the ultimate aim is to increase colonoscopy capacity to drive FIT to be ever more sensitive; the NHS (and workforce/QA support) run the risk of putting a major amount of time and effort into improving BS in the knowledge that once there is sufficient colonoscopy capacity the best option is to swap BS for FIT.

19. Thus, the implications of the ScHARR model are that the services should concentrate on driving FIT sensitivity and colonoscopy capacity up as fast as possible. If this is *not* the intention, then striving for high quality BS at as high an uptake as possible could be worthwhile.

20. If the consultation returns the view that England should decommission BS and focus efforts on increasing FIT sensitivities and extending the age range; then it should be noted that for a period the programme in England will not be optimised (i.e. will not find as many cancers and high risk adenomas as it could using BS in addition). It is currently only delivering the equivalent of FIT 180 ug/g to 60-74 year olds and will need to demonstrate how it will move to FIT 93ug/g for 50-74 year olds as quickly as possible.

Options for consideration:

21. A three month consultation has been opened to gauge whether there is support to either;

A. Combine BS at trial uptake and quality standards to 58-60 year-olds with a lower sensitivity FIT

B. Offer FIT to 50-74 year olds at thresholds below 93 ug/g and decommission (or not start) BS.

Views from consultees and stakeholders are sought on the following questions:

i. Is the ScHARR model sufficiently robust to support UK policy?
ii. Do the policy recommendations follow from the ScHARR work?
iii. Are the policy options feasible? If so how can efforts to deliver either be evidenced?

References

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