Roll out of Symptomatic FIT in West Yorkshire

Nuthar Jassam
Consultant Clinical Biochemist
Harrogate and District NHS Foundation trust
Important Messages
• Lab perspective
• Test perspective
• Diagnostic accuracy
• Future proof ICE requesting
• Team work
• Interactive process
The FIT in the Symptomatic (FITS) Study


FIT and endoscopy were completed by 280 patients

Using a cut-off faecal Hb concentration of 50 ng Hb/mL buffer (10 μg Hb/g faeces), NPV of
100.0% CRC
94.4% HRA
93.4% LRA
93.9% IBD.

In this setting, with high NPV, a negative test result provides considerable reassurance that the patient is unlikely to have important colorectal disease.
FIT Measurements

- Measures human blood in faeces
- Detect human haemoglobin with antibodies to globin.
- FIT would not differentiate between benign or malignant source of blood.
- Knowledge from FOB is not transferable to FIT.
SUSPECTED CANCER: RECOGNITION AND REFERRAL
Faecal Immunochemical Test (FIT) in primary care pathway

Patient with lower GI symptoms

Follow NG12

For Clarification
Only to consider patients satisfying NICE NG-12 1.3.4
NO INTERUPTION OF 2 WEEK WAIT PATIENTS

Refer via 2WW pathway
Aged 40 and over with unexplained weight loss and abdominal pain OR
Aged 50 and over with unexplained rectal bleeding OR
Aged 60 or over with:
  - Iron-deficiency anaemia OR
  - Changes in bowel habits

Undertake FIT
Aged 50 and over with unexplained:
  - Abdominal pain OR
  - Weight loss OR
Aged under 60 with:
  - Changes in their bowel habits OR
  - Iron-deficiency anaemia OR

FIT testing has a very high negative predictive value for colorectal cancer.
The Getting FIT Project: Nottingham study

- Cohort: Patient referred on the 2WW Pathway with no rectal bleeding
- **2 kits HM JACKarc & OC-Sensor**
- Sample from same bowel motion

- With a FIT value of >10μgHb/g faeces, different patients referred for further assessment, depending on the analyser used.

- With either FIT a value of >150μg/g has a high predictive value for CRC.
Making the choice of technology & other considerations

A number of analytical systems available – and spectrum growing all the time with new releases.

The OC Sensor, HM-JACKarc and FOB Gold

- Various rate of specificity & sensitivity
- Currently no primary reference material or method

NICE DG-30:
Results should be reported using a threshold of faeces (10 µg/g).
Homogeneity of stool sample

- Hb in the same bowel motion
  Differences in levels of Hb within the same bowel motion may be due to differences in distribution of blood within a single faecal sample.

- No data so far to support repeat negative FIT

- First -ve and repeated -ve may give false assurance
137 patients provided FIT device and remaining faeces in “poo pot”.
11 (8%) of patients had different interpretation

<table>
<thead>
<tr>
<th>Patient i-Hb</th>
<th>Lab i-Hb</th>
<th>Time to lab (hr)</th>
<th>Time to extract (hr)</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>78</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>Diverticulosis</td>
</tr>
<tr>
<td>49</td>
<td>9</td>
<td>13</td>
<td>20</td>
<td>No pathology</td>
</tr>
<tr>
<td>&lt;7</td>
<td>13</td>
<td>8</td>
<td>21</td>
<td>Diverticulosis</td>
</tr>
<tr>
<td>31</td>
<td>&lt;7</td>
<td>30</td>
<td>18</td>
<td>Diverticulosis</td>
</tr>
<tr>
<td>53</td>
<td>&lt;7</td>
<td>7</td>
<td>2</td>
<td>Diverticulosis + TA polyp (&lt;5)</td>
</tr>
<tr>
<td>17</td>
<td>&lt;7</td>
<td>8</td>
<td>1</td>
<td>No pathology</td>
</tr>
<tr>
<td>&gt;400</td>
<td>&lt;7*</td>
<td>12</td>
<td>19</td>
<td>Colorectal polyps (&gt;10), TA 30mm L</td>
</tr>
<tr>
<td>15</td>
<td>&lt;7*</td>
<td>9</td>
<td>3</td>
<td>No pathology</td>
</tr>
<tr>
<td>18</td>
<td>&lt;7*</td>
<td>8</td>
<td>2</td>
<td>No pathology</td>
</tr>
<tr>
<td>60</td>
<td>&lt;7*</td>
<td>9</td>
<td>18</td>
<td>Colorectal polyps (&gt;10), TA 12mm L + 20mm R.</td>
</tr>
<tr>
<td>13</td>
<td>&lt;7*</td>
<td>5</td>
<td>16</td>
<td>Colorectal polyps (&gt;10), 15mm L adenocarcinoma</td>
</tr>
</tbody>
</table>

Clinical outcome for patients with discrepant f-Hb results when comparing f-Hb sampling performed in the laboratory to sampling performed by the patient. Positive f-Hb was defined as ≥10 µg Hb/g faeces, * indicates f-Hb above LoD (>2 µg Hb/g faeces) but below the manufacturers quoted LoQ for the assay. TA = Tubular adenoma, L = left colon, R = right colon.
## Diagnostic Accuracy of 10 µg/g cut off

### NICE guidance: Evidence Base

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Country</th>
<th>Patients in study</th>
<th>NPV</th>
<th>PPV</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Number of cancers</th>
<th>Cancers missed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mowat et al *</td>
<td>2015</td>
<td>Scotland</td>
<td>755</td>
<td>99.5</td>
<td>14.2</td>
<td>89.3</td>
<td>79.1</td>
<td>28.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Rodriguez-Alonso et al *</td>
<td>2015</td>
<td>Spain</td>
<td>1003</td>
<td>99.9</td>
<td>12.8</td>
<td>96.7</td>
<td>79.8</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Godber et al **</td>
<td>2015</td>
<td>Scotland</td>
<td>484</td>
<td>100</td>
<td></td>
<td>100</td>
<td></td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Droste et al *</td>
<td>2011</td>
<td>Netherlands</td>
<td>2145</td>
<td></td>
<td></td>
<td>92.4</td>
<td>86.4</td>
<td>79</td>
<td>6</td>
</tr>
<tr>
<td>McDonald et al *</td>
<td>2012</td>
<td>Scotland</td>
<td>280</td>
<td>100</td>
<td>7.6</td>
<td>100</td>
<td>93.9</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

*OC-Sensor
**HM-JACK
Post Colonoscopy Colorectal Cancer Rate
usually measured as a diagnosis of CRC within 36
months of a negative colonoscopy

<table>
<thead>
<tr>
<th>False -ve rate for CRC</th>
<th>Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-6%</td>
<td>Bressler 2007</td>
</tr>
<tr>
<td>9%</td>
<td>Frenette 2007</td>
</tr>
<tr>
<td>3.5%</td>
<td>Than 2015</td>
</tr>
<tr>
<td>8.6%</td>
<td>Morris 2014</td>
</tr>
</tbody>
</table>

Harms of Colonoscopy:
Complications of colonoscopy: 25 per 10000 hospitalized from bleeding / perf.

*Curtesy of Ms Clare Adams; Surgeon HDT*
The future: FIT (f-Hb) Facts

Faecal haemoglobin concentration is affected by disease (of course) and:

- gender – men have higher f-Hb than women
- age – older people have higher f-Hb than younger
- deprivation (SES) – more deprived have higher f-Hb than less deprived
- probably ethnic group and race
FIT ICE Requesting in the context of low risk patients

Does patient have rectal bleeding?

Is inflammatory disease considered likely?

Test is not appropriate. Refer via NG12 2WW pathway.

Patient does not meet criteria, test cancelled.

Select all relevant criteria. Samples from patients that don’t meet criteria will not be analysed.
Select all relevant criteria. Samples from patient that don’t meet criteria will not be analysed

- Over 50 with unexplained abdominal pain
- Over 50 with unexplained weight loss
- Under 60 with changes in bowel habit
- Under 60 with iron deficiency anaemia
- Over 60 with anaemia, even in the absence of iron deficiency

FIT test requested
### What do I need to do with the results?

<table>
<thead>
<tr>
<th>Cut off</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 10 µg Hb/g</td>
<td>The GP should consider a lower GI 2ww referral for suspected cancer. The 2ww referral form has been updated to include a FIT test result.</td>
</tr>
<tr>
<td>&lt; 10 µg Hb/g</td>
<td>Although a negative FIT test should give us a very high degree of confidence of the absence of a cancer, it is important to note that a negative test result cannot absolutely rule out colorectal cancer as occasionally tumours do not bleed, or bleed intermittently.</td>
</tr>
<tr>
<td>7-10 µg Hb/g</td>
<td>Anaemia – The GP should consider an urgent OGD for investigation of anaemia. Diarrhoea - The GP should consider IBD esp. if patient &lt;45 years and/or any of the following: increased platelet increased CRP &amp; increased Calprotectin (if available). If all above negative and clinical suspicion of cancer persists then GP should consider a lower GI 2ww referral.</td>
</tr>
</tbody>
</table>

Comments provide safety netting.
Audit: Numbers and identification of practices not complying with NICE FIT testing referral criteria = 0% But…..

Total 158
Combination of two or more described in the clinical details.
FIT requests received (1st April – 31st May)
1526 packs distributed to Leeds GPs, 600 to Harrogate and 500 to Airedale.
Number of 2WW referrals as a result of positive FIT test

- 127 Negative
- 20 Positive
- 1 Equivocal
- 10 Rejected/No result

6 x patients referred for further investigations, 2 of which fast tracked for gastroscopy but Normal duodenal biopsies
## Positive FIT values

<table>
<thead>
<tr>
<th>Stats</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>31-93</td>
</tr>
<tr>
<td>Gender</td>
<td>Female= 9 , Male =11</td>
</tr>
<tr>
<td>Small polyps</td>
<td>2</td>
</tr>
<tr>
<td>&gt; 10 mm polyps</td>
<td>2</td>
</tr>
<tr>
<td>Adenoma</td>
<td>2</td>
</tr>
<tr>
<td>% of +ve FIT</td>
<td>12.6%</td>
</tr>
<tr>
<td>% CRC</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

### FIT values distribution

- Positive FIT: 3
- 10.0-100: 14
- 100-150: 1
- 300-400: 2
- >400: 0

### Total 17

- CRC: 3
- Polyps: 2
- Polyps & Adenoma: 2
- IBD: 6
- No pathology: 4
- Diverticulosis alone: 2

Total 17 cases were analyzed with 14 positive FIT values.
**Patient 1**

93 year old female
Presented with unexplained anaemia

**FIT** > 400

**Colonoscopy:** Caecal polyps, Likely rectal Malignancy, Diverticulosis

2 lesions. The lower appears malignant and the second is polypoidal

Adenoma

**Biopsy:** tubular adenomata, low grade dysplasia & invasive adenocarcinoma

**Staging:** T3b N1a EMVI 0 CRM threatened

**Patient 2**

77 year old male, history of coeliac disease

Presented with iron deficiency anaemia

**FIT** 54

**Colonoscopy:** Multiple adenoma, multiple polyps & adenocarcinoma

Adenoma: yes

**Biopsy:** invasive adenocarcinoma

**Diagnosis:** Semi circumferential rectosigmoid tumour

Cancer confirmed and staged: **T 3b N 0 EMVI 0 CRM** not involved
• A GP colleague:

The main deferential in my working life is IBS & Cancer

Not

IBS and IBD
Patient 1
93 year old female
Presented with unexplained anaemia
FIT > 400
Colonscopy:
Caecal polyps, Likely rectal Malignancy, Diverticulosis
2 lesions. The lower appears malignant and the second is polypoidal Adenoma
Biopsy: tubular adenomata, low grade dysplasia & invasive adenocarcinoma
Staging: T3b N1a EMVI 0 CRM threatened

Patient 2
77 year old male, history of coeliac disease
Presented with iron deficiency anaemia
FIT 54
Colonoscopy: Multiple adenoma, multiple polyps & adenocarcinoma
Adenoma: yes
Biopsy: invasive adenocarcinoma
Diagnosis: Semi circumferential rectosigmoid tumour
Cancer confirmed and staged: T 3b N 0 EMVI 0 CRM not involved
Summary

- Evolving strategies
- Evolving patient’s pathway
Thank you!

&

Any Question
Panel Discussion

1. Please use sli.do to ask your question of the panel
2. Respond to our questions on sli.do and share your experience
3. Feel free to ask questions verbally as well

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