Emerging evidence from MDCs in the UK

Using linked primary care data to investigate diagnostic pathways of cancer patients presenting with non-specific but concerning symptoms

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The ACE Programme
‘Accelerate, Coordinate, Evaluate’

ACE Programme: Wave 2: evaluation

• 5 projects with 10 sites across England developing & trialling Multidisciplinary Diagnostic Centre (MDC) based pathways

• Focus on patients with non-specific but concerning symptoms

Aim

To develop understanding of patients who present with non-specific but concerning symptoms, as in MDCs and how they might be different from cancer patients with more obvious symptoms using cancer registrations and primary care data

• Exploration of diagnostic pathways
• Variation by cancer site
National Cancer Diagnosis Audit (NCDA) – second audit of cancer in primary care

Rich source of primary care data for ~17,000 cancers diagnosed in 2014 in England from 439 participating GP practices (~5% in England)

Participating GP surgeries completed primary care information

- Symptoms
- Investigations
- Time intervals
- Number of consultations
- Avoidable delays

Research

Ruth Swann, Sean McPhail, Jana Witt, Brian Shand, Gary A Abel, Sara Hiron, Jem Rashbass, Georgios Lyratopoulos, Greg Rubin and the National Cancer Diagnosis Audit Steering Group

Diagnosing cancer in primary care:
results from the National Cancer Diagnosis Audit

http://bjgp.org/content/early/2017/12/18/bjgp17X694169
**Methods: Data linkage**

**Cancer registrations**
- Diagnosis date
- Stage at diagnosis
- Patient demographics

**NCDA**
- Primary care data

**Routes to diagnosis**

**Linked dataset**

**Cohorts**

National Cancer Registration and Analysis Service (NCRAS), Public Health England (PHE)
Methods: Symptoms

Using symptom(s) at presentation to build a cohort of MDC-like patients presenting *ONLY* with non-specific but concerning symptoms (NSCS) = ‘vague’

The NSCS cohort was compared with the remainder of the cohort = ‘obvious’ (excluding those who had no symptoms recorded – unknown or screening)

‘Vague’ cohort: MDC referral criteria & common MDC symptoms

- Distention
- Abdominal pain (upper, lower, NOS*)
- Bowel habit change
- Diarrhoea
- Constipation
- Nausea and/or vomiting
- Lymphadenopathy (generalised & localised)
- Pallor
- Jaundice

- Back pain
- Chest pain
- Chest infection
- Loss of appetite
- Deep vein thrombosis
- New onset diabetes
- Fatigue
- Weight loss

* not otherwise specified
Results: Previous work

National Cancer Diagnosis Audit (NCDA) data – 2014 diagnoses

- 17,042 cancers in total cohort
- 2,865 cancers (17% of total) – MDC symptoms - ‘vague’
- 10,333 cancers (61%) – at least one non-MDC symptom - ‘obvious’
- 3,844 cancers had no symptoms recorded: screening/not known (22%)

Patients in ‘vague’ group

More likely to
- present via emergency route
- be a later stage at diagnosis
- have longer time intervals during the diagnostic pathway
Results: Primary care consultations

Number of primary care consultations prior to referral

Vague  Obvious
Results: Primary care investigations

Primary care investigations ordered prior to referral

- Blood tests
- Urinary
- Imaging
- Imaging - X-ray
- Imaging - CT
- Imaging - Ultrasound
- Imaging - MRI
- Endoscopy
- Endoscopy - Upper GI
- Endoscopy - Colon
- Other
- None

Vague vs. Obvious
Results: Time intervals by route to diagnosis

Presentation to referral – primary care interval

Presentation to diagnosis – diagnosis interval

Days (median)

Vague  Obvious

0  2  4  6  8  10  12  14

0  10  20  30  40  50  60  70  80

All  Emergency  TWW  GP referral

All  Emergency  TWW  GP referral
Results: Time intervals by cancer site

Presentation to referral – primary care interval

- All: Days (median) range from 1 to 12
- Colorectal: Days (median) range from 1 to 12
- Haematological: Days (median) range from 1 to 12
- Lung: Days (median) range from 1 to 14
- Upper GI: Days (median) range from 1 to 12

Presentation to diagnosis – diagnosis interval

- All: Days (median) range from 10 to 50
- Colorectal: Days (median) range from 10 to 50
- Haematological: Days (median) range from 10 to 50
- Lung: Days (median) range from 10 to 50
- Upper GI: Days (median) range from 10 to 50
Results: Diagnostic routes by cancer site

- Vague
- Obvious
- All
- Colorectal
- Haematological
- Lung
- Upper GI
- Emergency
- TWW
- GP referral
- Other
Results: Stage by cancer site
Conclusions

• **MDC patients**
  • Higher proportions
    • Later stage disease, emergency presentation route to diagnosis
    • Multiple primary care consultations and investigations

• **Differences between MDC/non-MDC**
  • by diagnostic route & site – time intervals, route, stage

• **Limitations**
  • 2014 diagnoses
  • Subjectivity of GPs for some questions
  • Symptom list – MDC referral guidelines/symptoms
    (not NICE NG12 guidance)

• **Provides context for MDCs**
Publications & Acknowledgements

ACE Programme MDC interim report
https://www.cancerresearchuk.org/sites/default/files/ace_programme_mdc_interim_report_-_v2.5.pdf

Forthcoming publication – later in year

Data for this study is based on patient-level information collected by the NHS, as part of the care and support of cancer patients. The data is collated, maintained and quality assured by the National Cancer Registration and Analysis Service, which is part of Public Health England (PHE)

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