The MoleMate Trial: outcomes and impact

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Malignant cutaneous melanoma

- 5th commonest cancer
- >85% due to UV exposure
- Incidence rising rapidly
  - men, higher SES

- Increasing evidence that early detection leads to:
  - early stage at diagnosis
  - improved outcomes
Detecting melanoma in primary care can be challenging

In primary care
- pigmented lesions present commonly
- 2005 NICE guidelines: refer all suspicious lesions

For every 20 referred
- 10-15 excised
- 1 will be melanoma

Approaches to improve detection/management
- educational
- guidelines, checklists
- technical, diagnostic aids
SIAscopy and the MoleMate system

- SIAscopy = Spectrophotometric Intracutaneous Analysis
- patterns highly predictive of melanoma
- SIAscopy + primary care algorithm = the MoleMate system
The MoleMate Trial

2008-10, prospective RCT, set in 15 general practices in East England

Participants:
- Suspicious pigmented lesion: ‘could not immediately be diagnosed as benign and the patient reassured’

Randomised at patient level:
- Comparison- ‘Best Practice’
- Intervention- ‘Best Practice’ + MoleMate

Reference standard diagnosis:
- Histology, dermatology expert opinion

Primary outcome:
- Proportion of referred lesions biopsied/monitored by the experts ‘Clinically significant’
Effect of adding a diagnostic aid to best practice to manage suspicious pigmented lesions

- 1,297 participants with 1,580 lesions
- Randomised 643 (788 lesions) to intervention and 654 (792 lesions) to control groups

- Both groups performed much better than reported current practice
- No difference in appropriateness of referral
- Lower specificity of MoleMate led to increased referrals
- Clinicians: simple, cost-effective, easy, fast, unlikely to worry
- Patients: not anxious; diagnostic aid users more thorough, better communication, reassuring care
Early Outcomes

- 2012 Main findings
- 2013 RCGP Cancer Paper of the Year
- 2013-18 NIHR Clinician Scientist award
‘Best Practice’

- Systematic use of 7 point checklist
- Collaborated with Macmillan Cancer Support and BMJ Informatica
- Tool embedded in GP software

Studies

- Can electronic clinical decision support (eCDS) impact cancer outcomes using cancer registry data?
- How does eCDS implementation effect GPs, patients, the consultation?
Technology and diagnostic aids

Follow-up, using cancer registry

- After one year
  - **Control**: 2 new early melanomas, same sites; 1 in different site
  - **Intervention**: none
- After five years - none in same sites

- Spectroscopy based techniques
- Dermoscopy
- Teledermatology
- Mobile phone apps
- Computer-assisted diagnosis
- Reflectance confocal microscopy
Policy and Practice

- Validation of 7 point checklist in primary care using MoleMate data
- Influenced national and international clinical guidelines
  - **UK** - 2015 revised NICE guidelines for suspected cancer
  - **Australia** - 2016 RACGP Guidelines for preventive activities in general practice 9th edition (Red Book)

Research

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Using the 7-point checklist as a diagnostic aid for pigmented skin lesions in general practice: a diagnostic validation study
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