Diagnostic Journeys in Myeloma (DJI-M):
Tania Seale
PhD Student
North Wales Centre for Primary Care Research

Myeloma:
Destructive bone marrow cancer
Approx 5000 new cases diagnosed annually (UK)

Early symptoms vague
- Longer intervals
- Multiple GP consultations

Late diagnosis
- Emergency presentation
- Complications
- Poorer outcomes
An explanatory sequential research study

Systematic review

Quantitative study – survey to patient, GP and haematologist

Follow up with

Qualitative study – in-depth interviews patients and their GPs

Leading to

Interpretation – both datasets

Recruitment:
• Phase I: 84 patient participants; 54 GPs and 83 haematologists
• Phase II: 12 patient participants; 7 respective GPs

Intervals to diagnosis and treatment

Total interval

Patient interval:

Total interval: DJiM myeloma population
Median = 140; IQR = 77-267;
90th percentile = 641

Comparative cancer:
Breast – median = 60; IQR = 39-106;
(Hansen, et al. 2011)

Primary care interval: DJiM myeloma population
Median = 35; IQR = 25-94;
90th percentile = 79

Comparative cancer:
Breast – median = 7; IQR = 1-27;
90th percentile = 72
(Lyratzopoulos, et al. 2015)

Secondary care interval: DJiM myeloma population
Median = 45; IQR = 23-74;
90th percentile = 142

Comparative cancer:
Breast – median = 0; IQR = 0-1;
90th percentile = 7
(Din, et al. 2015)

Diagnostic interval: DJiM myeloma population
Median = 66; IQR = 36-142;
90th percentile = 240

Comparative cancer:
Breast – median = 27; IQR = 15-32; 90th percentile = 210
(Howell, et al. 2013)

Time to diagnosis interval: DJiM myeloma population
Median = 138; IQR = 55-287;
90th percentile = 592

Comparative cancer:
AML – median = 41; IQR = 17-85;
90th percentile =
(Howell, et al. 2013)

Total interval: DJiM myeloma population
Median = 140; IQR = 77-267;
90th percentile = 641

Comparative cancer:
Breast – median = 60; IQR = 39-106;
(Hansen, et al. 2011)

Primary care interval: DJiM myeloma population
Median = 35; IQR = 25-94;
90th percentile = 79

Comparative cancer:
Breast – median = 7; IQR = 1-27;
90th percentile = 72
(Lyratzopoulos, et al. 2015)

Secondary care interval: DJiM myeloma population
Median = 45; IQR = 23-74;
90th percentile = 142

Comparative cancer:
Breast – median = 0; IQR = 0-1;
90th percentile = 7
(Din, et al. 2015)

Diagnostic interval: DJiM myeloma population
Median = 66; IQR = 36-142;
90th percentile = 240

Comparative cancer:
Breast – median = 27; IQR = 15-32; 90th percentile = 210
(Howell, et al. 2013)

Time to diagnosis interval: DJiM myeloma population
Median = 138; IQR = 55-287;
90th percentile = 592

Comparative cancer:
AML – median = 41; IQR = 17-85;
90th percentile =
(Howell, et al. 2013)

Total interval: DJiM myeloma population
Median = 140; IQR = 77-267;
90th percentile = 641

Comparative cancer:
Breast – median = 60; IQR = 39-106;
(Hansen, et al. 2011)

Primary care interval: DJiM myeloma population
Median = 35; IQR = 25-94;
90th percentile = 79

Comparative cancer:
Breast – median = 7; IQR = 1-27;
90th percentile = 72
(Lyratzopoulos, et al. 2015)

Secondary care interval: DJiM myeloma population
Median = 45; IQR = 23-74;
90th percentile = 142

Comparative cancer:
Breast – median = 0; IQR = 0-1;
90th percentile = 7
(Din, et al. 2015)

Diagnostic interval: DJiM myeloma population
Median = 66; IQR = 36-142;
90th percentile = 240

Comparative cancer:
Breast – median = 27; IQR = 15-32; 90th percentile = 210
(Howell, et al. 2013)

Time to diagnosis interval: DJiM myeloma population
Median = 138; IQR = 55-287;
90th percentile = 592

Comparative cancer:
AML – median = 41; IQR = 17-85;
90th percentile =
(Howell, et al. 2013)

(Source: University of Aarhus General Practice Research Department cited Weller, et al. 2014)
Symptoms

- No symptoms - 6%
- 39 different symptoms reported
- Median number - 3 (range 0-7)
  - Longer PC intervals correlated - no. symptoms
- First symptom - pain 66%
  - 31% back pain

Symptoms prior to diagnosis

- Fatigue
- Anaemia
- Breathlessness
- Muscle and joint pain
- Bone pain
- Infection
- Loss of appetite
- Indivudal symptoms (N-32)>10%

Symptoms and help seeking

- Longer patient and total intervals – regression
  - Poor health status
  - Not taking analgesia

Interviews
Symptoms
  - Patient – no awareness
Symptom onset - longer
Normalising
Accelerated phase
**Primary care presentation, activity and investigation:**

- Present to GP first (>80%)
- Consultations within 1-2 weeks (84%)
- Consultations = median 3

No. different GPs seen:
- regression — longer patient/total interval/
- correlation - longer diagnostic interval

**Interviews**
- GPs don’t consider symptoms sinister
- GP – back pain focus
- Safety netting

**Investigations in response to symptoms**
- 75% investigated:
  - PEP - serum 50%; urine 49%
  - X-ray 43%
  - physical exam 26%

**Secondary care referral**

- GP referrals to 15 teams
  - Referral to haematology 50%
  - Longer intervals for multiple teams
  - acute and general medicine/acute surgical/ENT/musculoskeletal/ COTE/nephrology

- 25% present to SC as emergencies
  - 84% have seen their GP first
- Two Week Wait use - 43%
  - Longer SC intervals – no ‘cancer’ tag in referral

**Interviews**
- Suspicion low = varied referral
- GP thought - ‘respond appropriate’
Influencing timelier diagnosis

This is really difficult!
No single factor influences intervals to diagnosis

BUT………

3 key messages from this research:

- Symptoms
- Investigations
- Referral into secondary care

Thank you for listening!

Contact details: t.d.seale@bangor.ac.uk
Twitter – tania@llanddona

Supervisory panel:
Prof R Neal
Prof L Kennedy
Prof C Fegan
Dr E Litt
Dr N Williams

Funder: Tenovus Cancer Care Charity