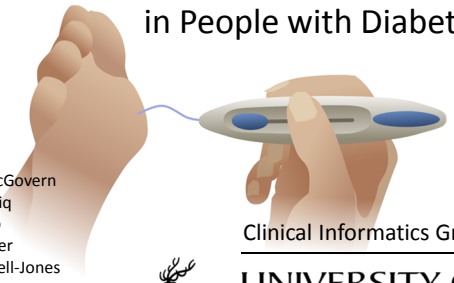
Peripheral Sensory Neuropathy is a Predictor of Mortality in People with Diabetes



Andrew McGovern
Meena Rafiq
Neil Munro
Lucilla Butler
David Russell-Jones
Simon Jones
Rob Hinchcliffe
Simon de Lusignan

Clinical Informatics Group

UNIVERSITY OF SURREY

Data Collection

- Study cohort taken from the QICKD trial database.
  - **127 primary care practices across England.**
  - **Anonymous records for all patients.**
  - **Five years of data (2006-2011).**
- Diabetes population: Adults with Type 1 or Type 2 (35,502 people)
  - **Identified using clinical read codes**
  - **Validated using serum glucose and HbA1c results.**

Presenter Disclosure Information

The American Diabetes Association requires the following disclosure to the participants:

Dr Andrew McGovern

Disclosed no conflict of interest

American Diabetes Association.

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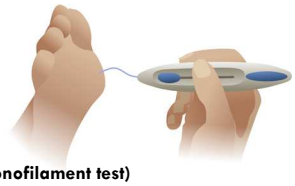
Method



- Predictor variables:
  - **Peripheral neuropathy (10g monofilament test)**
  - Age/gender
  - Smoking status
  - Alcohol use
  - Blood pressure
  - Ischaemic heart disease
  - Previous stroke or transient ischaemic attack
  - Renal impairment
  - Heart failure
  - HbA1c measurement
  - Cholesterol measurement

Study Aim and Design

Does the presence of **sensory neuropathy** predict **increased risk of death**?

Retrospective cohort study on a large community based population in England

Method

- Division of data:

2.5 years: **Baseline data**	2.5 years: **Follow up**

- Only those with monofilament testing included: 18,748 (52.2%)
- Outcome: **all cause mortality**
- Statistical methods:
  - Multilevel logistic regression analysis
  - Lme4 package in R

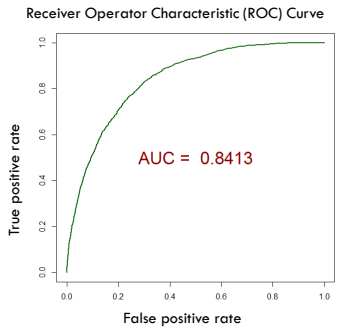
Results

- Abnormal sensation was identified in 1,548 (9.0%)
- Sensory neuropathy associated with mortality:
  OR **1.70** (**1.41-2.06**; **p < 0.001**)
- HbA1c > 58 mmol/mol (7.5%):
  OR **1.16** (**1.01-1.34**; **p = 0.037**)
- Current smoker:
  OR **1.63** (**1.39-1.89**; **p < 0.001**)
- Ischaemic heart disease:
  OR **1.27** (**1.12-1.43**; **p < 0.001**)

Conclusion

In people with diabetes **the presence of sensory neuropathy** (detected by primary care health-care providers using a 10g monofilament) **is associated with an increased risk of death** within the next 2.5 years.

Results



ROC curve without:

- Sensory neuropathy
  AUC = 0.8390
- Smoking status
  AUC = 0.8397
- Ischaemic heart disease
  AUC = 0.8410
- Heart failure
  AUC = 0.8373

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Strengths and limitations

Limitations

- Cohort study – causal link not investigated
- No cause of death data available
- Short duration of follow-up
- Significant proportion of the population untested

Strengths

- Large population size
- Real world data