Academic careers

Bruce Guthrie

Professor of General Practice

University of Edinburgh

Why am I here?

- Academics matter
- Some GPs want a full-time academic career
- Some GPs want an academic career element
  - Teaching
  - Research
- Research skills have many applications
- Confusing career path to the outsider

Core message

- If a trainee expresses an interest, then encourage them to get in touch…
  - Google will always find an academic e-mail
- Edinburgh – Bruce Guthrie, David Weller, Stewart Mercer
- Dundee – Blair Smith, Dan Morales
- St Andrews – Frank Sullivan
- Aberdeen – Peter Murchie
- Glasgow – Frances Mair

What's a career?

- Graduated, house jobs
- SHO medical rotation and MRCP
- HIV Community Liaison Team
- GP training and MRCGP
- Higher Professional Training in GP and MSc
- MRC Health Services Research Fellowship and PhD
- NHS R&D Postdoctoral Research Fellowship
- Harkness Fellowship in Health Policy
- Professor of Primary Care Medicine University of Dundee
- Professor of General Practice University of Edinburgh

← 3 months in a camper van

← 18 months holiday

← 2 years as a retainer

What's a career?

- Graduated, house jobs
- SHO medical rotation and MRCP
- HIV Community Liaison Team
- GP training and MRCGP
- Higher Professional Training in GP and MSc
- MRC Health Services Research Fellowship and PhD
- NHS R&D Postdoctoral Research Fellowship
- Harkness Fellowship in Health Policy
- Professor of Primary Care Medicine University of Dundee
- Professor of General Practice University of Edinburgh

← 3 months in a camper van

← 18 months holiday

← 2 years as a retainer

Early career entry points 1 - SCREDS

- Scottish Research Excellence Development Scheme
  - Designed to exclude GPs
- GP SCREDS
  - One each in Aberdeen, Dundee, Edinburgh and Glasgow
  - Usually enter at end of ST2, sometimes at end of ST1
  - ST3 is extended by one year
  - 50:50 clinical:academic training
  - Pay at standard trainee rates
  - Focus is research (but can be educational research)
  - Aim to get some core training, do one or more projects and publish

Early career entry points 2 – post-CCT

- NES funded Clinical Academic Fellowships
- Four WTE posts
- Offer 4-8 sessions of academic time
  - Clinical time is self organised
  - Pay at standard trainee rates
- Can get a second year but reapply so in competition
- Aim to get some core training, do one or more projects and publish
- Expectations depend on where you are coming from

Targeted exit

- Externally funded PhD fellowship
  - Typically three years
  - Paid at trainee rates (can be less than early career)
  - A major undertaking to prepare an application
  - Typical success rates are 20-25%
  - Our success rates are more like 50% because our early career posts provide good preparation and mentoring
  - Training, larger project, publish

What kind of work?

Morales et al. BMC Medicine (2017) 15:18
DOI 10.1186/s12916-017-0781-0

RESEARCH ARTICLE

Respiratory effect of beta-blo
people with asthma and card
disease: population-based ne
control study

Daniel R. Morales[1*], Brian J. Lipworth[2], Peter T. Donnan[3], Cathy Jack

Abstract

Background: Cardiovascular disease (CVD) is a common comorbidit
concerns have caused heterogeneity in clinical guideline recommen
blockers in people with asthma and CVD, partly because risk in the
The aim of this study was to measure the risk of asthma exacerbatio
population with asthma and CVD.

Methods: Linked data from the UK Clinical Practice Research Datalin
studies among people with asthma and CVD matched on age, sex a
ratios (IRR) were calculated for the association between oral beta-blc
(rescue oral steroids) or severe asthma exacerbations (hospitalisation

Results: The cohort consisted of 35,502 people identified with activ
were prescribed cardioselective and non-selective beta-blockers, resp
beta-blocker use was not associated with a significantly increased ris
Consistent results were obtained following sensitivity analyses and a se
non-selective beta-blockers were associated with a significantly increas
initiated at low to moderate doses (IRR 5.16, 95% CI 1.83–14.54, P = 0.0
when prescribed chronically at high dose (IRR 2.68, 95% CI 1.08–6.64, P
048, respectively).

Conclusions: Cardioselective beta-blockers prescribed to people with
significantly increased risk of moderate or severe asthma exacerbations
when strongly indicated.

Keywords: Asthma, Cardiovascular disease, Beta-blocker, Drug safety, F

* Correspondence: dr.z.morales@dundee.ac.uk; danielmorales@nhs.net
[1]Quality, Safety & Informatics Group, Division of Population Health Sciences, School of Medicine, University of Dundee, Mackenzie Building, Dundee DD2 4BF, UK
Full list of author information is available at the end of the article

BioMed Central

Gallacher et al. BMC Medicine 2014, 12:151
http://www.biomedcentral.com/1741-7015/12/151

RESEARCH ARTICLE

Stroke, multimorbidity and pol
nationally representative samp
patients in Scotland: implicatic
burden

Katie I Gallacher[1], G David Batty[2,3], Gary McLean[1], Stewart W Mercer[1], Peter Langhorne[4] and Frances S Mair[1*]

Abstract

Background: The prevalence of multimorbidity (the presence of two c
internationally. Multimorbidity affects patients by increasing their burde
the self-care demands, or treatment burden, that they experience. Trea
in operationalising treatments, navigating healthcare systems and man
This is an important problem for people with chronic illness such as st
both multimorbidity and burden of treatment. In this study, we examin
polypharmacy in a large, nationally representative population of prima
adjusting for age, sex and deprivation.

Methods: A cross-sectional study of 1,424,378 participants aged 18 ye
in Scotland that were known to be demographically representative of
information on the presence of stroke and another 39 long-term conditi

Results: In total, 35,690 people (2.5%) had a diagnosis of stroke. Of the 3
significantly more common in people with stroke. Of the people with a
additional morbidities present (94.2%) was almost twice that in the contr
age, sex and socioeconomic deprivation 5.18; 95% confidence interval (C
a record of 11 or more repeat prescriptions compared with only 1.5% of
deprivation and morbidity count 15.84; 95% CI 14.86 to 16.88). Limitation
rather than research purposes, a lack of consensus in the literature on th
and the absence of statistical weighting in the measurement of multimo
suitable for descriptive analyses.

Conclusions: Multimorbidity and polypharmacy were strikingly more co
compared with those without. This has important implications for clinica

* Correspondence: frances.mair@glasgow.ac.uk
[1]Institute of Health and Wellbeing, University of Glasgow, Glasgow G12 9LX, Scotland
Full list of author information is available at the end of the article

BioMed Central

Journal of Antimicrobial Chemotherapy Advance Access published May 7, 2015

J Antimicrob Chemother
doi:10.1093/jac/dkv095

Journal of Antimicrobial Chemotherapy

Time series analysis of the impact of an intervention in Tayside, Scotland to reduce primary care broad-spectrum antimicrobial use

Virginia Hernandez-Santiago*, Charis A. Marwick, Andrea Patton, Peter G. Davey, Peter T. Donnan and Bruce Guthrie

Division of Population Health Sciences, Medical Research Institute, University of Dundee, Mackenzie Building, Kirsty Semple Way, Dundee DD2 4BF, UK

*Corresponding author. Tel: +44-(0)1382-383792; Fax: +44-(0)1382-383802; E-mail: v.z.hernandezsantiago@dundee.ac.uk

Received 20 October 2014; returned 29 January 2015; revised 17 March 2015; accepted 19 March 2015

Objectives: Concern about *Clostridium difficile* infection (CDI) and resistance has driven interventions internationally to reduce broad-spectrum antimicrobial use. An intervention combining guidelines, education and feedback was implemented in Tayside, Scotland in 2009 aiming to reduce primary care prescribing of co-amoxiclav, cephalosporins, fluoroquinolones and clindamycin ('4C antimicrobials'). Our aim was to assess the impact of this real-world intervention on antimicrobial prescribing rates.

Methods: We used interrupted time series with segmented regression analysis to examine associations between the intervention and changes in antimicrobial prescribing (quarterly rates of patients exposed to 4C antimicrobials, non-4C antimicrobials and any antimicrobial in 2005–12).

Results: The intervention was associated with a highly significant and sustained decrease in 4C antimicrobial prescribing, by 33.5% (95% CI −26.1 to −40.9), 42.2% (95% CI −34.2 to −50.2) and 55.5% (95% CI −45.9 to −65.1) at 6, 12 and 24 months after intervention, respectively. The effect was seen across all age groups, with the largest reductions in people aged 65 years and over (58.4% reduction at 24 months, 95% CI −46.7 to −70.1) and care home residents (65.6% reduction at 24 months, 95% CI −51.8 to −79.4). There were balancing increases in doxycycline, nitrofurantoin and trimethoprim prescribing as well as a reduction in macrolide prescribing. Total antimicrobial exposure did not change.

Conclusions: A real-world intervention to reduce primary care prescribing of antimicrobials associated with CDI led to large, sustained reductions in the targeted prescribing, largely due to substitution with guideline-recommended antimicrobials rather than by avoiding antimicrobial use altogether. Further research is needed to examine the impact on antimicrobial resistance.

Keywords: family practice, quality of healthcare, interrupted time series studies

Introduction

Antimicrobials are commonly used in primary care, but are known to be unnecessary or inappropriate in up to 50% of cases, and are associated with a range of risks including the development of antimicrobial resistance[1–3] and *Clostridium difficile* infection (CDI).[4] In the USA up to 23 488 deaths annually are estimated to be due to infections by resistant organisms, and 14 000 to CDI.[5] Exposure to antimicrobials is the most modifiable risk factor for the development of CDI,[6] with broad-spectrum cephalosporins, fluoroquinolones and clindamycin the most implicated.[7,8] Antimicrobial exposure is particularly common in older people and care home residents, with an estimated 70% of care home residents prescribed one or more antimicrobials annually.[9,10]

Despite increasing concerns about adverse effects, antimicrobial use is increasing internationally. In 2010 there were 801 dispensed outpatient antimicrobial prescriptions per 1000 inhabitants in the USA,[11] with broad-spectrum antibiotics being used in up to 60% of cases with acute respiratory tract infections.[12] Penicillins were the most dispensed antibiotic class in 2010, accounting for 30% of total antimicrobial prescribing, followed up by macrolides (26%), cephalosporins (14%) and quinolones (11%). A 14% overall rise in quinolone use was observed between 1999 and 2010, mainly in the outpatient setting, which is particularly concerning,[11] although there is huge prescribing variation across different states. In the same way, outpatient antimicrobial use in Europe has increased since 1997, particularly penicillins and quinolones.[13]

Developing effective interventions to reduce antimicrobial use which can be implemented on a large scale is therefore of considerable importance. There is reasonable systematic review evidence that interventions to reduce antimicrobial prescribing in

Postdoctoral

- A difficult transition
- Hard to get a core funded post
  - Katie Gallacher in Glasgow
- Ideally get another fellowship…

An example – Dan Morales

- NES Clinical Academic Fellow Aberdeen and St Andrews
- CSO PhD Fellowship in Dundee
- Discovery Fellow in Dundee
- Worked for European Medicines Agency for two years
  - Did the analysis underpinning change to quinolone guidance
  - Appointed to EMA PRAC as independent expert
- Wellcome Trust Postdoctoral Research Fellowship
  - Effectively a tenure track post

Teaching careers

- Most of the teaching is done by you…
  - Undergraduate
  - Postgraduate
- Undergraduate core posts
  - Curriculum design and evaluation
  - Ideally have a PhD (less required than in the past)
  - An evolving career pathway
  - We want to talk to these trainees too…

Why do it?

- An interesting and varied career
- Neither easier or harder
  - Different kinds of skills and experience needed
  - Different kinds of pressure eg time, going back to square one, uncertainty
  - What's the worst that could happen?