ESF Science Meeting, Vienna, Austria, 6 July 2012

European translational research on the management of respiratory tract infections in primary care: implications for clinical practice and research

Joint EGPRN (European General Practice Research Network) - TRACE (Translational Research on Antimicrobial Resistance and Community-acquired infections in Europe) – GRIN (General Practice Respiratory Infections Network) symposium

Scientific report

Summary

EGPRN (www.egprn.org) has been actively promoting collaborative research and developed a research agenda for primary care, including challenging research on clinical diagnosis and prognosis, mixed methods, and translational research. TRACE (www.esf.org/trace) aims to consolidate the expertise within several European research programmes, in particular GRACE (Genomics to combat Resistance against Antibiotics in Community-acquired LRTI in Europe; www.grace-lrti.org), and to disseminate their results. GRACE focuses on the commonest acute illness managed in primary care and a major reason for antibiotic prescribing.

We applied for and were granted a symposium as part of the scientific programme of the 18th WONCA Europe Conference "The art & science of general practice" held in the Austria Center Vienna, July 4-7, 2012. The acceptance rate for oral presentations was 26% (272 out of 1058 submitted abstracts). In this symposium we presented GRACE results starting from a case of an adult patient presenting in primary care with acute cough. The chairs fostered discussion on the presentations, focussing on the implications for LRTI management in primary care as well as for primary care research on this topic (see Annex 1 Programme table).

The presentations were based on the results of the largest observational studies on the presentation and management, and on the aetiology, diagnosis and prognosis of over 3000 adult patients presenting with acute cough in primary care in 12 European countries, the largest randomised placebo-controlled trial on the effect of amoxicillin 1g TID in over 2000 of these patients, and another randomised trial on the effect on antibiotic prescribing of either an online training on the use of a C-reactive protein point-of-care test supplemented with the provision of such a device or an online communication skills training supplemented with the provision of an interactive patient booklet endorsed by the European Antibiotic Awareness Day in over 4000 patients.

The symposium provided great opportunity for large-scale support of primary care physicians in the management of acute cough/LRTI in primary care, particularly for the antibiotic prescribing decision, as well as for primary care research on this topic.

Description of the scientific content of and discussions at the event

First, GRACE (Genomics to combat Resistance against Antibiotics in Community-acquired LRTI in Europe; www.grace-lrti.org) and TRACE (Translational Research on Antimicrobial Resistance and Community-acquired infections in Europe ; www.esf.org/trace) were introduced by Theo Verheij. He referred to the paper by Nuttall J et al on building an international network for a primary care research program,[1] and to TRACE as one of the successful spin-off of GRACE, aiming to consolidate the expertise integrated in several research programmes, in particular within the GRACE Network of Excellence, beyond EC funding, and to apply it to steer ongoing and to deploy new research activities, and to disseminate its results.

Second, unpublished results on the diagnosis in adults presenting with acute cough were presented. Saskia de Vries-van Vugt presented a diagnostic study in 12 European countries showing whether signs, symptoms complemented by C-reactive protein or procalcitone can be helpful in detecting pneumonia in adult patients presenting with acute cough in primary care. Samuel Coenen presented on the aetiology of community-acquired LRTI, showing the opportunity for GRACE and TRACE to answer the important research questions, how to diagnose bacterial infection in adult patients presenting with acute cough in primary care based on signs and symptoms complemented by for example C-reactive protein. Currently, diagnostic studies show conflicting results.[2 3] As some adult patients presenting with acute cough in primary care turn out to be patients with asthma or COPD, Theo Verheij presented preliminary data on undetected chronic obstructive pulmonary disorders in these patients.

Third, Samuel Coenen presented preliminary results of the validation of two major prediction rules, the Pneumonia Severity Index (PSI)[4] and the CURB-65[5], to predict prognosis in adults presenting to primary care with acute cough (LRTI). Francis N et al already published on the potential use and validity of CRB-65 in primary care based on data from the largest observational studies on the presentation and management.[6] Without imputing missing data their dataset had limited power. The dataset the currently presented results were based on, included registration of all the necessary data to calculate PSI and CURB-65 scores in close to 3,000 patients.

Fourth, Chris Butler presented results from a selection of papers based on the largest observational studies on the presentation and management in 3,402 patients.[7-10] His presentation included data on the effect of antibiotics for acute cough in primary based on these observational studies as well as preliminary results of the largest randomised placebo-controlled trial on the effect of amoxicillin 1g TID in over 2000 of these patients.

Finally, Chris Butler presented unpublished results of another randomised trial on the effect on antibiotic prescribing of either an online training on the use of a C-reactive protein point-of-care test supplemented with the provision of such a device or an online communication skills training supplemented with the provision of an interactive patient booklet endorsed by the European Antibiotic Awareness Day in over 4000 patients.

The science of the last two points has also been described in a background paper by Coenen S referring to TRACE.[11] Instead of hand outs, most of the presented data are still preliminary and/or unpublished, the participants were referred to this paper. It was in the conference bag of all participants of the approximately 3,000 participants of the 18th WONCA Europe Conference 2012.

Most of the discussion points involvement clarifications of the study methodology. In addition, it was suggested to assess the relation between the characteristics of the sputum and the aetiology. In the GRACE observational studies only the colour of the sputum has been recorded using predefined answering categories, no other characteristics. The link between aetiology and the effect of antibiotics will be assessed within GRACE. It was noted that a different threshold to consult between the different primary care research networks involved might have influenced the prevalence of pneumonia, bacterial infection and of asthma and COPD in the different networks. Asking whether any other patient at home is affected, was suggested as a good question in relation to the diagnosis in adults presenting with acute cough. This question was not part of the CRFs of the GRACE studies. Finally, it was deemed important to assess the diagnosis in those patients with higher PSI and/or CURB-65 scores. This will not be feasible in retrospect within GRACE.

References

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11. Coenen S. Infectious diseases in primary care; managing the interface between the person and the community. *Eur J Gen Pract* 2012;18:117-21.

Assessment of the results and impact of the event on the future directions of the field

It is clear that the results and impact of the event will allow us to present more GRACE and TRACE results at similar occasions, e.g. future regional WONCA conferences, future EGPRN meetings, future GRIN meetings etc.

Several participants were eager to get hold of the presentation to inform their colleagues in their respective countries. And some have already been provided with the slides on the published results.

We believe this way of disseminating GRACE results fits exactly within one of the main objectives of TRACE. In addition, such science meetings support the consolidation of the expertise integrated in the GRACE Network of Excellence beyond EC funding, and to apply it to steer on-going and to deploy new research activities.

Annexes: programme of the meeting and full list of speakers and participants.

Annex I

Table Programme

European translational research on the management of respiratory tract infections in primary care: implications for clinical practice and research

Chair (Maciek Godycki-Cwirko)

Introduction of GRACE (Theo Verheij)

Presentations and discussions

1. Diagnosis in adults with acute cough
    a. Diagnosing pneumonia (Saskia de Vries-van Vugt)
    b. Diagnosing bacterial infection (Samuel Coenen)
    c. Diagnosing asthma and COPD (Theo Verheij)
2. Assessing prognosis of acute cough in primary care (Samuel Coenen)
3. Antibiotics for acute cough in primary care (Chris Butler)
4. Strategies to reduce antibiotic use (Chris Butler)

General discussion

EGPRN = European General Practice Research Network
TRACE = Translational Research on Antimicrobial Resistance and Community-acquired infections in Europe
GRIN = General Practice Respiratory Infections Network

Annex II

List of speakers and participants*

Title	Full name	Gender	Affiliation, comprising full professional address Email address
Prof	Samuel Coenen	Male	University of Antwerp, Centre for General Practice and Laboratory of Medical Microbiology, Vaccine & Infectious Disease Institute (VAXINFECTIO), Universiteitsplein 1, 2610 Antwerp, Belgium samuel.coenen@ua.ac.be
Prof	Theo JM Verheij	Male	Julius Center for Health Sciences and Primary Care, UMC Utrecht, PO Box 85500, 3508 GA Utrecht, The Netherlands th.j.m.verheij@umcutrecht.nl
Prof	Chris C Butler	Male	Cardiff University, Institute of Primary Care and Public Health, 5th Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4XN, UK ButlerCC@cardiff.ac.uk
Prof	Maciek Godycki-Cwirko	Male	Department of Family and Community Medicine, Medical University of Lodz, ul. Kopcinskiego 20, 90-153 Lodz, Poland maciekgc@uni.lodz.pl
Dr	Saskia van Vugt	Female	Julius Center for Health Sciences and Primary Care, UMC Utrecht, PO Box 85500, 3508 GA Utrecht, The Netherlands S.F.vanVugt@umcutrecht.nl

* The symposium, one of 26 sessions in parallel, was very well attended by approximately 100 participants of the 18th WONCA Europe Conference “The art & science of general practice” held in the Austria Center Vienna, July 4-7, 2012.