

require additional exercises such as test-retest reliability. However, in spite of these limitations, we feel that the strong correlations noted in cross-sectional and longitudinal analysis warrant reporting and provide support for the use of this simple morbidity assessment tool in routine practice.

In summary, we report data on the use of the RCP 3 questions in primary care asthma assessments in subjects undergoing close clinical observation while volunteering for a clinical research study, correlating the RCP score with validated physiological and questionnaire-based asthma control parameters. We observed that in this dataset, a negative response to all 3 RCP questions was associated with good asthma control as measured by other validated tools, that any positive responses were associated with sub-optimal control, and that more than one positive response was likely to be associated with poor control. These data support the use of this instrument in routine clinical care, although further assessments and formal validation in larger datasets are advisable.

Conflicts of interest

The authors have declared that there are no conflicts of interest.

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COMMENTARY

Re: Thomas M *et al.* *Prim Care Resp J* 2009;**18**(2):83-88 Assessing asthma control using the RCP 3 questions

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The Royal College of Physicians (RCP) 3 key questions ask about the patient's experience of their asthma symptoms; these include night-time waking, day-time symptoms and

interference with activity – questions routinely asked during clinical consultations. Fourteen groups of UK clinicians developed these questions through consensus; their aim was

to provide an outcome measure that was brief and meaningful for patients, and which clinicians could use to aid clinical decision-making, to develop and compare services, and to audit clinical work.¹ UK national guidelines on the management of asthma now suggest that clinicians use these three questions as an asthma audit tool.² Although the original report describing their development acknowledged that these questions should be formally validated,¹ and their usefulness as an outcome measure of asthma control has been questioned,³ this research is still awaited.

In this issue of the *PCRJ*, Thomas and colleagues report the correlations found between the RCP 3 questions and a validated measure, the Asthma Control Questionnaire (ACQ).⁴ Data were originally collected to investigate the feasibility of measuring exhaled nitric oxide during asthma review in general practice.⁵ These data were then subjected to *post-hoc* analysis to evaluate the RCP 3 questions in the assessment of asthma control.

The study included 20 adults and 15 children attending two nurse-led primary care asthma clinics in the South-West of England. All subjects had documented evidence of asthma, and at least one prescription in the previous six months for inhaled β_2 -agonists. Patients did not participate in the study if they were current smokers, had a maintenance treatment of inhaled corticosteroids at a dose exceeding 2000 mcg/day of beclomethasone or equivalent, or maintenance treatment with oral corticosteroids. The subjects completed the questionnaires at 2-weekly intervals over 12 weeks. Data were collected and analysed from adults and children separately.

The group report a strong correlation between the RCP and ACQ scores in adults but not children, indicating that the RCP score is as good as the ACQ at distinguishing levels of asthma control between adult subjects. A strong relationship was also found between changes in the RCP and ACQ scores – implying that the RCP can detect small changes in levels of asthma control over time.

The authors suggest that the strength of these relationships indicates that the RCP 3 questions provide clinicians with 'useful information'. However, they also note several methodological limitations which derive from the context in which they collected the data (i.e. a small prospective pilot study in which subjects frequently completed the two questionnaires). They also emphasise that the ACQ has not been validated for paediatric use. These limitations may dilute the 'trustworthiness' of their findings.

The sample size is particularly important to consider, since the authors base their findings regarding adults on data from only 20 subjects. This is significant, because smaller samples provide less precision, resulting in a greater amount of error in the data. The confidence intervals, which are an estimate of precision of the data, are omitted on this occasion; if these

are wide then it is unlikely that the same relationships between these questionnaires would be found if the study were to be repeated.

In addition, given the frequency with which the subjects answered the questionnaires in this study, they would have become increasingly familiar with the questions, and aware that questions were similar in both questionnaires. This may have led to subjects repeating answers given for one questionnaire in the other questionnaire. This may have also occurred between visits, particularly as the RCP 3 questions are affected by recall bias.³ Since their findings are based on post-hoc analysis, the authors could not avoid these methodological limitations. A future formal validation study will avoid these limitations by, for example, investigating the change in the RCP scores of stable subjects following an intervention known to improve asthma control.

Lastly, but of no less importance, the ACQ has not been formally validated as an indicator of asthma control in children. Thomas *et al* therefore suggest caution when interpreting the data they present for these relationships. Also, the RCP 3 questions were developed for use with patients over the age of 16 years.¹ The findings presented in this issue are therefore of interest but do not support the use of the RCP 3 questions in paediatric asthma consultations.

Although this paper does not conclusively confirm that the RCP 3 questions measure asthma control accurately, it does pave the way for a formal validation of this tool. Meanwhile the conclusion of Steven and colleagues³ remains: clinicians should continue to rely on their clinical judgement rather than the RCP 3 questions when investigating the asthma control of individual patients.

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