CORRESPONDENCE

The Asthma Control Questionnaire for children: still more questions than answers

To the Editors:

Optimising control is the main goal in paediatric asthma management and reliable instruments that can help physicians to evaluate asthma control in an easy way are valuable. The article by JUNIPER *et al.* [1] provides some initial insights on the use of the Asthma Control Questionnaire (ACQ), an instrument that was originally developed for adult asthma, to assess asthma control in children. The process of developing and validating such a questionnaire is a delicate one. In 2009 JUNIPER [2] published a critical editorial about the consequences of even small modifications to original questionnaires and how this could influence the validity of these instruments. Therefore, we were surprised to see that despite her previous exposé [2], in the current paper JUNIPER *et al.* [1] pooled observations from two different versions of the ACQ (*i.e.* one version for children up to 10 yrs of age and one version for older children and teens) in one validation study. Essential differences between these ACQ versions are the type of administration (interviewer *versus* written assessment), the wording (*i.e.* for the younger children alternative wording and instructions were available) and parental help being allowed for the youngest children. Based on previous research, differences in reliability of scores between the younger and older group of patients could be expected [3]. In the current article all outcomes were clustered and favourable results for the older children and teens may mask problems that exist in the youngest group, or *vice versa*. Therefore, separate validation for these two age-related questionnaires would seem inevitable.

Lack of standardisation could hamper the within-subject reliability as well as the between-subject reliability of a questionnaire. In the ACQ version for the younger group this could be a problem because rephrasing can result in different responses from the same child and parents may interpret and score ACQ questions differently from their child. These two potential threats of reliability should have been evaluated and eliminated before this mixed methods approach in the questionnaire for the younger group could be considered as a valid method of assessing asthma control. Moreover, this evaluation should be performed in a much bigger sample of children than the nine children included in the developmental phase of the instrument [4].

In our view, further studies that separately evaluate these two different versions of the ACQ are needed before the ACQ should be considered as a reliable tool to evaluate asthma control in children. New studies are essential as the sample described in the article (35 children) seems far too small to perform subgroup analyses. Also, additional information about the validity of the mixed methods approach that was

used in the ACQ version for the younger children is needed. Inaccurate measurement of asthma control could lead to misinformed treatment decisions and/or inaccurate conclusions in future scientific papers. Although the first results of JUNIPER *et al.* [1] are very promising, these issues need to be addressed before the ACQ can be considered as a valid tool to assess control in paediatric asthma.

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REFERENCES

- 1 Juniper EF, Gruffydd-Jones K, Ward S, *et al.* Asthma Control Questionnaire in children: validation, measurement properties, interpretation. *Eur Respir J* 2010; 36: 1410–1416.
- 2 Juniper EF. Validated questionnaires should not be modified. *Eur Respir J* 2009; 34: 1015–1017.
- 3 Juniper EF, Guyatt GH, Feeny DH, *et al.* Measuring quality of life in children with asthma. *Qual Life Res* 1996; 5: 35–46.
- 4 Juniper EF, Gruffydd-Jones K, Ward S. Developing an interviewer-administered version of the asthma control questionnaire (ACQ) for children ≤ 10 years. *Eur Respir J* 2007; 30: Suppl. 51, 382s.

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From the authors:

L. van den Bemt and co-workers raise an important issue concerning the use of both self- and interviewer-administered versions for the validation of the Asthma Control Questionnaire (ACQ) in children and one we considered carefully when designing the study. We wanted to ensure that the ACQ could be used in clinical practice (individual children followed over time), paediatric research (6–16 yrs) and adult research (≥ 12 yrs). Therefore, two separate questionnaires was not an option. The development of the ACQ had ensured that it contained the questions that are important for assessing asthma control in children 6–16 yrs of age (content validity) but we knew the self-administered adult version could not be completed unaided by younger children. We considered