8. **French CT,** Irwin RS, Fletcher KE, *et al*. Evaluation of a cough-specific quality-of-life questionnaire. *Chest* 2002;**121**:1123—31.
9. **Birring SS,** Prudon B, Carr AJ, *et al*. Development of a symptom specific health status measure for patients with chronic cough: Leicester Cough Questionnaire (LCQ). *Thorax* 2003;**58**:339—43.
10. **Powers SW,** Patton SR, Hommel KA, *et al*. Quality of life in childhood migraines: clinical impact and comparison to other chronic illnesses. *Pediatrics* 2003;**112**:e1—5.
11. **Mansour ME,** Kotagal U, Rose B, *et al*. Health-related quality of life in urban elementary schoolchildren. *Pediatrics* 2003;**111**:1372—81.
12. **Landgraf JM,** Abetz L. *Measuring health outcomes in pediatric populations: issues in psychometrics and application*. In: Spilker B, ed. *Quality of Life and Pharmacoeconomics in Clinical Trials*. Philadelphia: Lippincott-Raven Publishers, 2004:793—802.
13. **Polley L,** Yaman N, Heaney L, *et al*. Impact of cough across different chronic respiratory diseases: comparison of two cough-specific health-related quality of life questionnaires. *Chest* 2008;**134**:295—302.
14. **Marchant JM,** Newcombe PA, Juniper EF, *et al*. What is the burden of chronic cough for families? *Chest* 2008;**134**:303—9.
15. **Newcombe PA,** Sheffield JK, Juniper EF, *et al*. Development of a parent-proxy quality-of-life chronic cough-specific questionnaire: clinical impact vs psychometric evaluations. *Chest* 2008;**133**:386—95.
16. **Juniper EF,** Guyatt GH, Feeny DH, *et al*. Measuring quality of life in children with asthma. *Qual Life Res* 1996;**5**:35—46.
17. **Ware J Jr,** Kosinski M, Keller SD. A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. *Med Care* 1996;**34**:220—33.
18. **Varni JW,** Burwinkle TM, Seid M, *et al*. The PedsQL 4.0 as a pediatric population health measure: feasibility, reliability, and validity. *Ambul Pediatr* 2003;**3**:329—41.
19. **Chang AB,** Newman RG, Carlin J, *et al*. Subjective scoring of cough in children: parent-completed vs child-completed diary cards vs an objective method. *Eur Respir J* 1998;**11**:462—6.
20. **de Blic J,** Thomson A. Short-term clinical measurement: acute severe episodes. *Eur Respir J Suppl* 1996;**21**:4s—7s.
21. **Chang AB,** Newman RG, Phelan PD, *et al*. A new use for an old Holter monitor: an ambulatory cough meter. *Eur Respir J* 1997;**10**:1637—9.
22. **World Health Organization.** *Constitution of the World Health Organization*. Geneva: WHO, 1947.

Lung alert

Immunoglobulin G2 subclass deficiency and H1N1

Severe H1N1 infection is associated with risk factors that include pregnancy, obesity and immunosuppression. This study assessed levels of serum immunoglobulin G (IgG) and IgG subclasses in patients with severe H1N1 infection (defined as infection requiring respiratory and/or vasopressor support) and moderate H1N1 infection (defined as those requiring hospitalisation) and in healthy pregnant women.

Thirty-nine patients (19 with severe infection and 20 with moderate infection) were assessed. The presence of severe H1N1 infection was significantly associated with low levels of total IgG, IgG1 and IgG2 compared with moderate infection, and similarly hypoalbuminaemia and anaemia, but only hypoalbuminaemia and low mean IgG2 levels remained statistically significant after multivariate analysis. Convalescent phase serum samples were obtained from 15 IgG2-deficient patients (11 with severe infection and 4 with moderate infection) at a mean of 90±23 days. Eight (73%) patients with severe infection remained IgG2 deficient, but hypoalbuminaemia was resolved in most patients. Pregnant women with H1N1 infection had significantly lower mean levels of IgG2 compared with the pregnant control subjects.

Severe H1N1 infection is associated with IgG2 deficiency, which appears to persist, but it is uncertain whether those patients had underlying IgG2 deficiency, or whether interaction between H1IN1 infection and the host B cells leads to such deficiency. Nevertheless, this may prove an interesting therapeutic avenue to pursue in the future.

► **Gordon CL**, Johnson PDR, Permezel M, *et al*. Association between severe pandemic 2009 influenza A (H1N1) virus infection and immunoglobulin G2 subclass deficiency. *Clin Infect Dis* 2010;**50**:673—8.

B Kathiresan

Correspondence to Bhuvaneswari Kathiresan, Plymouth Hospitals NHS Trust, Plymouth, UK; doctorbhuvaneshwarii@rediffmail.com

Thorax 2010;**65**:823. doi:10.1136/thx.2010.145649