

Urticarial reactions developed following consumption of beef, pork, lamb, kangaroo and rabbit. She was able to consume milk, chicken, eggs and fish without any difficulties. Since July 2002, she had avoided all meat products and had no further reactions. However, she was able to consume meat such as prosciutto and other ham products in small quantities. There was no history of atopy. Previously she had experienced an episode of angioedema that was associated with the consumption of aspirin but there was no previous history of reactions to other medications.

Skin-prick tests (SPT) were performed using the fresh food by the prick-prick method and a panel of commercial reagents which included cat, dog, cockroach, house dust mite, cow's milk, egg white, egg yolk, wheat, peanut and soy supplied by Hollister-Stier (Spokane, USA). Specific IgE was measured using Pharmacia CAP RAST (Uppsala, Sweden). Penicillin sensitivity was investigated using the penicilloyl polylysine (PPL) and a minor determinant mixture (MDM) (Allergopen, Reinbek, Germany). SDS-PAGE and immunoblotting were performed according to the method described by Restani et al. (3).

A positive reaction occurred with cat, dog, house dust mite and cow's milk. Skin testing was performed with fresh beef, pork, lamb, kangaroo, rabbit, prosciutto, commercial ham and bovine serum albumin (BSA). Positive reactions were seen with all the meat tests. Skin testing with penicillin reagents was negative. Measurements of specific IgE to beef, pork and lamb were positive. Sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE) and immunoblotting were performed with cooked beef, chicken, turkey, horse, pig and kangaroo. The results demonstrated a specific binding of circulating IgEs to a protein having a molecular weight of 81 kDa, and common to beef, horse, pig and kangaroo. A 41-kDa band was also positive for all meat tested. BSA (1, 4) and bovine serum gamma globulin (5) have both been described as clinically relevant allergens in beef. Actin and tropomyosin have also been described but are not considered significant meat allergens (3, 5). On immunoblot, our patient reacted to an

81-kDa protein, which we have not yet fully identified. The patients' serum also reacted to a 41-kDa band present in all the meats, which corresponds to actin. The significance of binding to actin is unclear. A previous study has demonstrated a high number of positive responses to actin on immunoblot but not confirmed by SPT (3). Actin may be a possible allergen but in polymerized form (the muscular form) does not bind antibodies. Food manufacturing processes may affect the allergenicity of food products through inactivation or destruction of specific epitopes (6). Prosciutto is processed by seasoning and salt curing which may have resulted in a lack of allergenic epitopes in this patient. However, she did develop a wheal to prosciutto on SPT. A unique aspect of this case is the finding of a positive skin test with kangaroo meat, which supports the clinical observation of the development of urticaria following ingestion. This is the first case report of allergy to kangaroo meat. Avoidance of all mammalian meat has resulted in remission of the urticarial reactions.

*Regional Department of Immunology and Allergy
Royal Victoria Infirmary
Newcastle-Upon-Tyne
UK
Tel: 0191 282 5517
Fax: 0191 282 5070
E-mail: helen.bourne@nuth.northy.nhs.uk

Accepted for publication 8 September 2004
Allergy 2005; 60:706-707
Copyright © Blackwell Munksgaard 2005
DOI: 10.1111/j.1398-9995.2005.00760.x

References

1. Fiocchi A, Restani P, Riva E, Qualizza R, Bruni P, Restelli AR et al. Meat allergy I: Specific IgE to BSA and OSA in atopic, beef sensitive children. *J Am Coll Nutr* 1995;**14**:239-244.
2. Graham C, Sussman GL, Beezhold DH. Immediate hypersensitivity reaction to venison and beef [Abstract]. *J Allergy Clin Immunol* 1997;**99**:S144.
3. Restani P, Fiocchi A, Beretta B, Velona' T, Giovannini M, Galli CL. Meat allergy III-Proteins involved and cross-reactivity between different animal species. *J Am Coll Nutr* 1997;**16**:383-394.

4. Werfel SJ, Cooke SK, Sampson HA. Clinical reactivity to beef in children allergic to cows milk. *J Allergy Clin Immunol* 1997;**99**:293-300.
5. Ayuso R, Lehrer SB, Tanaka L, Ibanez MD, Pascual C, Burks AW et al. IgE antibody response to vertebrate meat proteins includes tropomyosin. *Ann Allergy Asthma Immunol* 1999;**83**:399-405.
6. Paschke A, Besler M. Stability of bovine allergens during food processing. *Ann Allergy Asthma Immunol* 2002;**89**(Suppl): 16-20.

The Child Behaviour Checklist in the study of emotional and behavioural problems in children with asthma

K. Reichenberg*

Key words: asthma; Child Behaviour Checklist; children; emotional and behavioural problems; psychological adjustment.

The Child Behaviour Checklist (CBCL) is the most commonly used questionnaire to assess parent-reported emotional and behavioural problems in children and adolescents. In two of the 120 questions in the 1991 version of the questionnaire, on which most published studies are based, parents are asked to report if their child suffers from allergy or asthma. These two questions were, as were all items, included on the assumption that they would help predict referrals to child psychiatric services. This did not hold true and the answers to the two items were eliminated in summation of scores (1).

The present study was carried out to determine if the item on presence of child's asthma can be used together with the other questions to study the epidemiology of emotional and behavioural problems in childhood asthma. The Swedish 1992-93 normative sample of 1308 6-16-year olds,

Child Behaviour Checklist insufficient as a single source in research on adjustment in childhood asthma.

Table 1. Parent-reported emotional and behavioural problems, the Child Behaviour Checklist (CBCL)

	Children with neither asthma nor allergy (n = 925)	Children with asthma (n = 81)
Total problems	13.9 (13.1–14.7)	16.9 (13.5–20.3)
Internalizing problems	3.8 (3.5–4.1)	4.8 (3.6–6.0)
Externalizing problems	5.5 (5.2–5.9)	6.4 (4.8–8.1)

Results are expressed as mean with 95% confidence intervals in parentheses.

described in detail elsewhere, was used (2). Data from 1200 children (579 boys and 621 girls, mean age 11.2 years) with complete records from the two questions on allergy and asthma and the 118 emotional and behavioural problem items were examined.

The distribution of problem scores is given as mean and 95% confidence intervals (CI) of mean, prevalence rates as proportions with 95% CI. Eighty-one parents rated either 1 (somewhat true) or 2 (very true) for the presence of asthma, resulting in a 6-month prevalence of 5.7% (95% CI 4.5–7.1%). Parents of 925 children reported neither allergy nor asthma. In view of very small gender differences for problem scores, figures for boys and girls were collapsed.

In this first analysis using the allergy and asthma questions of the CBCL, the 6-month asthma prevalence rate using the CBCL questionnaire was low compared with the 12-month asthma prevalence of 13.6% (95% CI 12.1–15.1%) reported in a postal questionnaire in 1995 by parents of 7–16-year olds in one Swedish area (3) and the 9.3% (95% CI 8.1–10.6%) reported in 1996–97 by parents of 11-year olds in another Swedish area (4).

Parents were asked to rate their children's problems on a 0–2 scale, 0 = no or never during the previous 6 months. Two main groups of problems were identified: internalising (withdrawn, somatizing and anxious/depressed) and externalizing (delinquent and aggressive). As seen in the Table 1, mean problem scores were slightly higher in children with asthma than in healthy children. However, CI of means overlapped for the two groups. The somewhat increased figures were much lower than those reported in a meta-analysis of clinical samples of children with asthma (5). In a hospital asthma clinic sample of 59 7–9-year old Swedish children, data collected in

1997–98, mean total problem scores were 25.9 (95% CI 20.4–31.4), mean internalizing problem scores 7.7 (95% CI 5.8–9.6) and mean externalizing scores 10.0 (95% CI 7.8–12.1). These figures were way above those of healthy children (6).

It is concluded that the CBCL scores on presence of asthma are not sufficiently valid. The questionnaire should therefore not be used as a single source to study the epidemiology of emotional and behavioural symptoms of the illness. However, the questionnaire is very rich in information on parents' perceptions of their children's emotional and behavioural problems and large numbers of children from many countries have been screened. These data ought to be used in the creation of empirically derived models of which features of asthma contribute to poor psychological adjustment and how social conditions can add to emotional and behavioural problems of children with asthma.

*The Nordic School of Public Health
PO Box 12133
SE-402 42 Göteborg
Sweden
Tel: +46 31 693999
Fax: +46 31 691777
E-mail: kjell@reichenberg.se

Accepted for publication 31 August 2004
Allergy 2005; 60:707–708
Copyright © Blackwell Munksgaard 2005
DOI: 10.1111/j.1398-9995.2005.00758.x

References

1. Achenbach TM. *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington: University of Vermont Department of Psychiatry, 1991.
2. Larsson B, Frisk M. Social competence and emotional/behaviour problems in 6–16 year-old Swedish school children. *Eur Child Adolesc Psychiatry* 1999;8:24–33.

3. Bråbäck L, Appelberg J, Jansson U, Kälvesten L. Changes in prevalence and severity of asthma among schoolchildren in a Swedish district between 1985 and 1995. *Acta Paediatr* 2000;89:465–470.
4. Annus T, Björkstén B, Mai XM, Nilsson L, Riikjäär MA, Sandin A et al. Wheezing in relation to atopy and environmental factors in Estonian and Swedish schoolchildren. *Clin Exp Allergy* 2001;31:1846–1853.
5. McQuaid EL, Kopel SJ, Nassau JH. Behavioral adjustment in children with asthma: a meta-analysis. *J Dev Behav Pediatr* 2001;22:430–439.
6. Reichenberg K, Broberg AG. Emotional and behavioural problems in Swedish 7-to-9-year olds with asthma. *Chronic Resp Dis* 2004;1:183–189.

Safety of celecoxib in patients with adverse reactions to nimesulide

G. Liccardi, G. D'Amato, G. W. Canonica, G. Lobefalo, P. Noschese, A. Piccolo, A. Salzillo, G. Passalacqua*

Key words: celecoxib; cyclo-oxygenase-2 inhibitors; drug hypersensitivity; nimesulide; nonsteroidal anti-inflammatory drugs.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are frequently responsible for hypersensitivity skin reactions and, at a lesser extent, for other 'type B' reactions, such as asthma, rhinitis and anaphylaxis.

The mechanisms are not fully understood, but it is accepted that the inhibition of the isoform 1 of the cyclo-oxygenase (COX-1) enzyme induced by NSAIDs is frequently involved (1). Nimesulide (N) is a prevalent COX-2 inhibitor, and it is considered as a first-choice alternative in patients intolerant NSAIDs (2). Nevertheless, the widespread use of N has sensibly raised the rate of adverse reactions to it. In such highly sensitive patients identifying a safe alternative drug is a compelling need. Celecoxib (CE), a novel high affinity COX-2 inhibitor, has an efficacy similar

Celecoxib is safe in nimesulide-intolerant patients.