385 Interrelationship of Antioxidant Enzymes and Lipid Peroxidation in Allergic Patients to Inhalants *JM Mate*, MJ Torres†, L Gonzalez†, CP Gómez*, JM Segura*, M Blanca†* *Molecular Biology Department, Malaga University †Research Unit for Allergic Diseases, Carlos Haya Hospital, Malaga, Spain

Reactive oxygen species (ROS) are released in response to different stimulus. At low levels they contribute to intercellular message and defense mechanisms. Free radicals can influence or modulate inflammatory processes. These are controlled by enzymatic and non-enzymatic antioxidant defenses such as superoxide dismutase (SOD), glutathione peroxidase (GSHPx) and catalase (CAT). The aim of the study was to evaluate the status and the interrelationship of different antioxidant enzymes activities and thiobarbituric acid reactive substances (TBARS) levels in subjects allergic to inhalants.

Thirty allergic subjects with rhinitis and/or asthma were included in the study. All were symptomatic and were not taken any drug at the moment of the study. Skin tests were made to a standard battery of allergens including house dust mite, pollen, molds and animal dander. Blood samples were collected and CAT, GSHPx, SOD and TBARS analysis were carried out as described (1). Statistical comparisons between groups were made by ANOVA analysis.

The activities of SOD and CAT in mononuclear cells in allergic patients were found to be significantly enhanced compared to controls. On the contrary the activity of GSHPx was lower in patients than in controls, for both mononuclear cells and erythrocytes. The activity of SOD was found to be higher in erythrocytes of patients than in controls. In CAT activity there were no differences. TBARS levels were higher in both mononuclear cells and erythrocytes from allergic patients.

We conclude than free radicals antioxidant enzymes are involved in enzymatic coordinating mechanisms in allergic reactions.

1) Matés et al. Blood Cells, Molecules and Diseases 1999;25:103-109

386 Non-Resolution of Infantile Food Protein-Induced Enterocolitis Syndrome (FPIES) *PJ Busse, HA Sampson, SH Sicherer* Mount Sinai School of Medicine, New York, NY

FPIES is a non-IgE mediated gastrointestinal manifestation of food allergy that typically presents in early infancy. It is characterized by dramatic symptoms of vomiting, diarrhea, and failure to thrive, sometimes with acidemia/dehydration and methemoglobinemia, during the chronic ingestion of cow's milk and/or soy. Symptoms following acute ingestion after a period of elimination include delayed vomiting (2 hours) and diarrhea (6 hours), sometimes with hypotension (20%). These stereotypical symptoms have formed the basis for this clinical diagnosis. Formal studies on resolution are lacking, but sensitivity is generally reported to resolve within 1-2 years. However, over the past 2 years, we have documented by oral food challenges, non-resolution of FPIES in 4 children beyond age 4 yrs (a boy age 6 yrs, and girls ages 4.5, 6, and 8.5 yrs). Initial presentation with vomiting, diarrhea and failure to thrive caused by cow's milk (2 pts), or cow's milk and soy (2 pts) occurred within 7 weeks of birth and resolved with exclusion diets (using hydrolyzed formula). The disorder was not associated with positive tests for food-specific IgE antibody and alternative causes for symptoms were excluded. Through the first several years of life, 3 patients had accidental ingestion (cow's milk- 6 episodes, soy- 1 episode) that triggered the typical symptoms of FPIES. Altogether the children had a total of 7 positive (cow's milk- 5, soy- 2) physician-supervised oral food challenges, fulfilling the criteria of Powell [Comprehensive Therapy 1986;12:28] for FPIES. The four most recent challenges were performed at the ages listed above for each child. Challenges using only 0.15 to 0.6 mg/kg of protein were accompanied by an increase in peripheral polymorphonuclear leukocyte count > $3,500/mm_3$ [in 3 challenges in which it was measured] and severe symptoms required treatment with intravenous fluid (7 challenges) and corticosteriods (6 challenges). In conclusion, we have demonstrated that infantile FPIES can persist beyond the age of 2-3 years with dramatic symptoms occurring after acute exposure to the causal food protein.

387 Impact of Food Allergy on Quality of Life *A Mu˜n oz-Furlong, SA Noone, SH Sicherer* Food Allergy Network, Fairfax, VA
Mount Sinai School of Medicine, New York, NY

The acute (anaphylaxis) and chronic (atopic dermatitis, asthma) manifestations of food allergy are well documented, but the impact of this disease on quality of life for patients and families has not been well studied. The children's health questionnaire (CHQ-PF50), a tool designed for administration to parents that measures the child's physical and psychosocial health, and impact of the child's health on parents/family, was utilized. This tool, with additional questions about food allergy, was mailed to a random sampling of 400 members of the Food Allergy Network, a lay organization that provides educational information to families with food allergies. Mailings were directed to families with children aged 5 to 18 (an age group on which the tool has been validated). The first 191 responses, received within 3 weeks of mailing, were analyzed. The mean age of the food allergic children was 10.8 years (range, 5-18 yrs); 58% were male. Fifty-six percent were allergic to 1 or 2 foods, the remainder to >2 foods. Ninety-four percent were under the care of an allergist and 92% were prescribed epinephrine. Concomitant chronic atopic diseases included: asthma with atopic dermatitis- 35%, atopic dermatitis alone-15%, asthma alone-37%, and 13% had neither asthma nor atopic dermatitis. In comparison to previously established norms, the families scored significantly lower in scales for general health perception (GH), emotional impact on the parent (PE) and limitation on family activities (FA) (59.7 vs. 73.0, 68.2 vs. 80.3, 73.8 vs. 89.7, respectively; one sample t test $p < 0.0001$). Associated atopic disease, influenced primarily by those with both asthma and atopic dermatitis, accounted for a significant reduction in the GH scale (ANOVA, $p = 0.0003$), but not for measures of PE and FA. Within the study group, food allergic individuals with several (> 2) food allergies had significantly lower scores for 9 of 13 scales compared to individuals with few (1-2) food allergies. However, those with 1 or 2 food allergies scored significantly lower ($p < 0.0001$) than established norms on scales for GH, PE and FA. In conclusion, this preliminary analysis indicates that childhood food allergy has a significant impact on general health perception, emotional distress in parents and upon family activities. Factors that influence reductions in these scales include associated atopic disease and the number of foods being avoided.