

10%.² Granulomas, both caseating and noncaseating,⁷ have been observed in the lymph nodes, spleen, liver, central nervous system, and bone marrow. Patients with CVID with granulomas appear to be at higher risk for autoimmune complications, with the prevalence being 53% in a series of 17 patients.² Although the pathogenesis of granulomas in CVID has not been elucidated, there is speculation that the granulomas might result from T-cell² and cytokine⁸ perturbations.

IVIG, the mainstay of treatment for CVID, is essential for the prevention of frequent infections and should be administered to maintain trough IgG levels within the normal range.

This report describes an unusual presentation of a primary immunodeficiency in a patient whose immunoglobulin levels could not be measured, who had a large abdominal granulomatous mass, and who had granulomas in the spleen, small bowel, and cervical lymph node. The continued fevers were the impetus for further evaluation. Timely diagnosis and initiation of monthly IVIG treatments are critical because delayed diagnosis, particularly for an asplenic patient, places patients with CVID at risk for serious bacterial infections, organ damage, and possibly death.

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Available online April 14, 2005.
doi:10.1016/j.jaci.2005.02.021

Largess, excess, and tithing

To the Editor:

Sample medications are seen as a major vehicle by which Pharmaceutical Research and Manufacturers of America markets those drugs they choose to promote. In 1998, 85.9% of expenditures were spent sampling the top 250 drugs and 51% on the top 50 drugs.¹ The pharmaceutical industry gives billions of dollars in samples because such practice is effective business. Drug samples have been repeatedly shown to influence clinicians' prescribing patterns, at times directing them away from evidence-based guidelines.^{2,3}

Looked at in another way, Pharmaceutical Research and Manufacturers of America is not entirely mercenary. Their contributions to health care via free medications can be seen as significant and are likely underacknowledged. In the United States, this largess is divided between drug samples and long-term patient assistance.

In 1997, \$300,000 (retail value) in sample medications was given to our allergy practice.⁴ In 2004, we again monitored the amount of sample medications given to our practice—2 offices staffed by 2 doctors and 1 nurse practitioner. For 6 months, all samples were logged. When extrapolated over the entire year, approximately \$400,000 of medications were given to our practice. Because cost of medications has risen 3% to 5% yearly since 1997,⁵ the amount of sample medication seems roughly the same. However, when the cost of living⁶ and the rising cost of insurance and medications (including copays) are taken into account, sampling in relevant terms is less.

The distribution of our medications is as follows:

Antibiotics	\$39,500
Antihistamines $\pm$ decongestants	49,700
Intermediate β -agonists	9,200
Nasal steroids	78,400
Leukotriene antagonists	7,400
Inhaled steroids $\pm$ long-acting β -agonists	164,000
Other	60,000+

Because we are specialists in asthma care, Glaxo-SmithKline (Research Triangle Park, NC) provided us \$125,000 in 1 drug, Advair, used to treat asthma. These samples were for use by 3 providers. However, there are 3000 to 4000 allergists (doctors) practicing in the United States. If, conservatively estimated, only \$30,000 of Advair is given to each allergist, in excess of \$100,000,000 of 1 drug is given to 1 specialty alone. Although \$16.373 billion has been said to be given away by the pharmaceutical industry in samples of all drugs in 2003, considering the example of Advair, this may well be a gross underestimate.⁷

As in 1997, we find we are not as judicious in dispersing our samples as we might be. Criteria for our giving of samples are not limited or always centered on true economic need. Likewise, some small percentage of our samples continues to be wasted, to lie fallow on our shelves or expire before use. In an effort to minimize waste and better utilize what is given to us, our practice

has started tithing, allocating 10% of our samples to a local indigent pharmacy whose mission is to provide uninsured and underinsured patients' short-term medication needs. The pharmacy's verification of economic need insures that more medication gets to those who most benefit by it.

A pharmacist at that site helps patients receive proper education concerning dosing, frequency, and side effect profiles of medication, a service often neglected in the routine dispensing of samples.⁸

An indigent pharmacy can be an excellent example of utility, one where flexibility hinges the model. In the setting of an outpatient indigent pharmacy structured to minimize costs, long-term medication needs may be served by switching medications according to availability, changing to generic medications when appropriate, and/or seeking long-term medication assistance from pharmaceutical companies.

We who are given so much must constantly look for ways to give it back. We encourage other practices to follow suit.

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Disclosure of potential conflict of interest: Bruce L. Wolf has stock/other equity ownership in Pfizer and is on the speakers' bureau for GlaxoSmithKline, Astra Zeneca, and Pfizer. All other authors: none disclosed.

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Available online April 14, 2005.
doi:10.1016/j.jaci.2005.02.025

Does absorption across the buccal mucosa explain early onset of food-induced allergic systemic reactions?

To the Editor:

The absorption of dietary protein is important in the development and elicitation of food-induced allergic reactions. Eighty years ago, it was suggested that undi-

gested egg proteins were absorbed in human subjects.¹ Subsequent investigations have demonstrated absorption of intact dietary proteins, including food allergens, in the human circulation after ingestion.² The absorption fraction is largely unknown, but approximately 50 ppm of the ingested dose has been estimated.³ Absorption of food proteins can take hours, but systemic reactions occurring in less than 30 minutes are common among individuals with food allergy.⁴ We therefore aimed at investigating the absorption and kinetics of allergenic peanut proteins and a possible local uptake from the oral cavity in healthy adults. The study was approved by the local ethical committee (KF 01-081/01).

Blood samples were drawn from individuals who had ingested peanuts. All had negative case histories for peanut allergy and negative skin prick test responses and specific IgE assay results for peanuts, soy, and pollen, and all had fasted 8 hours before peanut intake. The allergenic activity of absorbed peanut in serum was detected by means of histamine release (HR) from passively sensitized basophils.⁵ In brief, Lymphoprep-isolated mononuclear cells (specific density: 1.077) (Nycomed, Oslo, Norway) containing 1% to 2% basophils were obtained from buffy coat bank blood with an anti-IgE-induced HR of greater than 30% and no response to peanut. These donor cells were stripped of cell-bound IgE and subsequently sensitized with serum from a patient with peanut allergy (verified on the basis of double-blind placebo-controlled peanut challenge, HR, skin prick test, and specific IgE level of 136 kU_A/L; Pharmacia CAP system). The specificity of HR was confirmed by the absence of peanut-induced HR from basophils when sensitized with serum from nonallergic individuals. The HR standard curve was made by using an extract of 4 peanut species (raw peanut, stock solution of 6.4 mg protein/mL) subsequently diluted in nonallergic serum. Standard or serum samples (50% diluted) from the indicated time points were incubated with sensitized basophils, and the released histamine was determined by means of fluorometric analyses and expressed as the percentage of the total cellular histamine content. A release of greater than 10% was considered positive, and the assay sensitivity was 5 pg of peanut protein per milliliter of serum.

Experiment 1a. Ten individuals (5 female patients; median age, 25 years) ingested 100 g of raw peanut, and blood was drawn at 0, ½, 1, 2, 3, 4, 5, and 24 hours. Peanut allergens were detected in the serum of 8 of 10 individuals (Fig 1, A), as demonstrated by a significant increase in HR 30 minutes to 5 hours after ingestion that peaked at 3 hours but with a considerable interindividual variation in the amount of absorbed peanut allergen.

Experiment 1b. One individual (male; age, 36 years) ingested 5 different amounts (1-100 g) of raw peanut weekly, and blood was drawn at the indicated intervals (Fig 1, B). Detection of peanut allergens was possible from as early as 10 minutes to 24 hours after ingestion of 3.5 to 100 g, with a rough relationship between ingested dose and biologic activity. The 35 g dose appeared to produce larger biologic activity than 100 g, indicating a lack of