Correspondence

Lack of association between the 7888 C/T polymorphism in the *AID* gene and atopy in a Spanish population

To the Editor:

Noguchi et al[1] have recently identified 3 novel polymorphisms (5923 A/G, 7888 C/T, 8578 A/C) and a rare variant (Arg25Cys) in the gene encoding activation-induced cytidine deaminase (AID). The *AID* gene is a putative RNA-editing deaminase[2] member of the cytosine deaminase family that encodes a 198-amino-acid protein involved in class switch recombination and somatic hypermutation.[3] In their study Noguchi et al[1] conclude that polymorphism 7888 C/T (a silent mutation located in exon 4) in the *AID* gene might be associated with the pathogenesis of atopic asthma and with the regulation of total serum IgE levels. We have analyzed the 7888 C/T polymorphism of *AID* in a Spanish population. One hundred twelve adult subjects recruited from the Allergy Department of the University Hospital of Salamanca (Spain) were studied. Sixty-seven patients were atopic, and 44 of them presented with atopic asthma. Forty-five subjects were considered control subjects. After PCR amplification, the 7888 C/T polymorphism was identified by the gain of an *Nla*III restriction site.[1] As shown in Table I, we have not found any association between the 7888 C/T polymorphism and the presence of atopic asthma. We have also analyzed the possible relationship between this polymorphism and IgE levels. Patients' IgE levels were similar independently of the allele they carried (Table I). Atopy is a complex disease, and many genes have been implicated in its development. Here we report lack of association between atopic asthma and the 7888 C/T polymorphism of the *AID* gene. The discrepancy with the results reported by the group of Noguchi et al[1] could be attributed to the different ethnic background of the subjects included in our series. We think that it is necessary to perform studies in individuals from other races before drawing a definitive conclusion on the influence of the *AID* gene in atopic asthma and in the regulation of IgE levels.

Maria Isidoro-García, MD, PhD[a]
Sergio Roa-Gómez, BSc[a]
Ignacio Davila, MD, PhD[b]
Felix Lorente, MD, PhD[b]
Rogelio Gonzalez-Sarmiento, MD, PhD[a]

[a]*Molecular Medicine Unit*
Department of Medicine
University of Salamanca
Campus Unamuno
Salamanca 37008, Spain
[b]*Department of Allergy*
University Hospital of Salamanca
Spain

REFERENCES

1. Noguchi E, Shibasaki M, Inudou M, et al. Association between a new polymorphism in the activation-induced cytidine deaminase gene and atopic asthma and the regulation of total serum IgE levels. J Allergy Clin Immunol 2001;108:382-6.
2. Muto T, Muramatsu M, Taniwaki M, Kinoshita K, Honjo T. Isolation, tissue distribution, and chromosomal localization of the human activation-induced cytidine deaminase (AID) gene. Genomics 2000;68:85-8.
3. Revy P, Muto T, Levy Y, et al. Activation-induced cytidine deaminase (AID) deficiency causes the autosomal recessive form of the Hyper-IgM syndrome (HIGM2). Cell 2000;102:565-75.

doi:10.1067/mai.2003.1642

Reply

To the Editor:

We thank Dr Isidoro-García and her colleagues[1] for their study, which replicated our previous analysis[2] of the association between the 7888C/T polymorphism of the AID gene and atopic asthma and total serum IgE levels.

Unfortunately, their findings do not support ours. In addition to the ethnic differences between the study populations (pointed out by the Isidoro-García group), differences in study design might be important in the discrepancy. We used a family-based transmission disequilibrium test, whereas Isidoro-García et al conducted a case-control study, which is vulnerable to hidden population stratifications. Difficulty in definite determination of control individuals is also a major problem in case-control association studies of atopy. Isidoro-García et al treated total IgE levels as a dichotomous trait (IgE levels: >100 KU/mL and <100 KU/mL), whereas we treated total IgE levels as a quantitative trait.

We found the transmission-nontransmission ratio of the C allele to affected children to be 1.87 (56/30). Although the odds ratio of the C allele, based on a case-control design, was not compared directly with that of the transmission disequilibrium test, we think that the analysis by Isidoro-García et al did not have sufficient power, because the number of samples was small. However, the

TABLE I. Distribution of patients with the 7888C allele according to the presence of atopy, atopic asthma, and total serum IgE levels

	Atopy, n = 112 (%)		Atopic asthma, n = 112 (%)		Total IgE levels, n = 112 (%)	
	Yes, n = 67	No, n = 45	Yes, n = 44	No, n = 68	>100 kU/L, n = 56	<100 kU/L, n = 56
7888 C positive	44 (65.7)	33 (73.3)	29 (66)	48 (70.6)	39 (69.6)	38 (68)
7888 C negative	23 (34.3)	12 (26.7)	15 (34)	20 (29.4)	17 (30.4)	18 (32)