Comment on: Greenbaum et al. Fall in C-Peptide During First 2 Years From Diagnosis: Evidence of at Least Two Distinct Phases From Composite Type 1 Diabetes TrialNet Data. Diabetes 2012;61:2066–2073

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We read with interest the article recently published by Greenbaum et al. (1) describing the novel observation of the association of basophil count with change in C-peptide in recently diagnosed type 1 diabetes (T1D). The authors speculated that this association could be based on a compensatory attempt to deviate cells via interleukin-4 cytokine in the autoimmune response. In fact, by repeatedly activating basophils and mast cells using anti-FcεR1, Hübner et al. (2) delayed the onset of diabetes in NOD mice. Thus, in accordance with previous suggestions, the replication of immunological phenotype observed in chronic helminth infections could protect against an autoimmune disease. Nevertheless, Greenbaum et al. cautiously mentioned in the article that in order to rule out that the association occurred by chance, it should be replicated by other groups in other datasets.

We have checked the association of basophil count and β-cell function in a cohort of newly diagnosed T1D patients prospectively followed up for 12 months after the onset of the disease. We evaluated data from 214 consecutively (2000–2010) newly diagnosed T1D patients (all Caucasian, aged 27.1 ± 6.9 years; 86 women; BMI 22.0 ± 2.6 kg/m^2; A1C 11.5 ± 2.6%; 0.63 ± 0.28 units/kg/day of insulin). In addition to clinical data, the dataset included information on β-cell function (basal and glucagon-stimulated C-peptide) and complete blood count at onset and after 1-year follow-up. Neither basal (0.79 ± 0.49 ng/mL) nor stimulated C-peptide at onset (1.3 ± 0.8 ng/mL) was related to basophil cell count. This was also the case when the relationship was investigated after 12 months (basal, stimulated C-peptide, and change in stimulated C-peptide with respect to the onset). Likewise, basophil count was not significantly different in those subjects with a stimulated C-peptide higher or lower than 0.6 ng/mL.

In conclusion, our results did not support the findings of Greenbaum et al. using TrialNet data. This finding could be related to several differences in the characteristics of individuals included in TrialNet analysis. Among others, probably the most relevant one is that our cohort only included data from adult patients and in the TrialNet dataset more than 60% of individuals were younger than 17. Thus, the relationship between basophils and β-cell function in recent onset T1D warrants further investigation.

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REFERENCES

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