



Seasonality of month of birth in children and adolescents with Hashimoto thyroiditis

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Introduction

•A number of studies have previously described seasonality of birth in children with type 1 diabetes, thus suggesting that the autoimmune process may begin during fetal development.

•However, there is a lack of data regarding autoimmune thyroid disease in childhood.

Objectives

To analyse the seasonal birth month pattern in young patients with Hashimoto thyroiditis and compare it with that of youth controls.

Methods

•Medical records of a total of 298 children and adolescents with a diagnosis of Hashimoto thyroiditis before the age of 18 years, made from 2005 to 2015, were retrospectively reviewed.

•298 consecutive subjects that were evaluated, between 2013 and 2015, in a tertiary unit for any reason, provided that they had no personal or family history of thyroid or any other autoimmune disease at least in first-degree relatives, served as controls.

•Statistical analysis was performed using a chi-square test.

Results

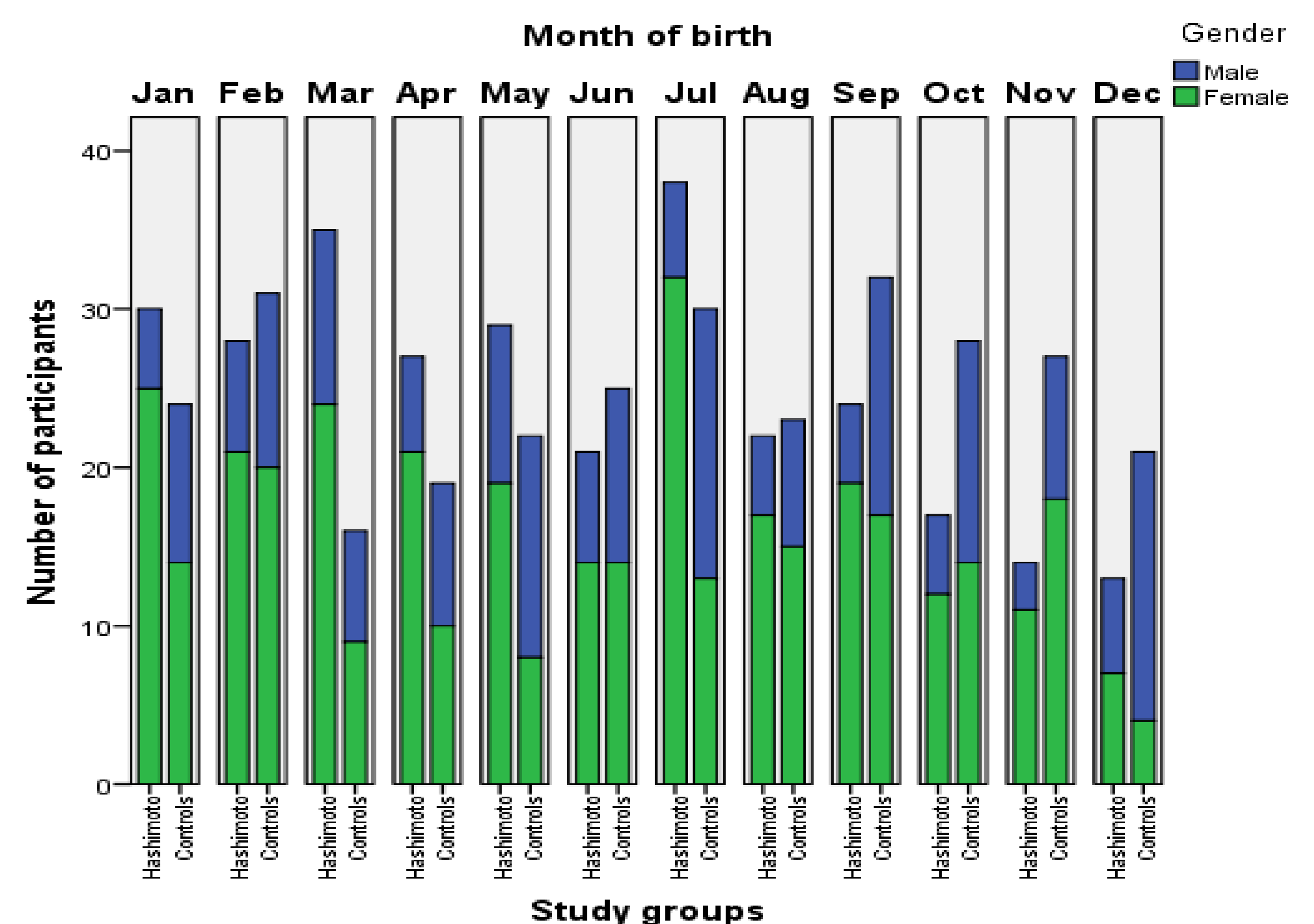
•Significant differences were found between children and adolescents with Hashimoto thyroiditis and healthy controls as far as the pattern of month of birth distribution is concerned ($\chi^2=21.397$, 11 degrees of freedom, $p=0.029$)

•The highest and lowest predispositions to Hashimoto thyroiditis were inherent in those born in March to May and October to December, respectively

•When analysis was performed separately for males and females, similar birth patterns of patients with autoimmune thyroiditis were obtained only in the subgroup of females ($\chi^2=18.283$, 11 degrees of freedom, $p=0.07$ for females, $\chi^2=10.013$, 11 degrees of freedom, $p=0.529$ for males).

Results (cont.)

Figure 1. The pattern of month of birth distribution in Hashimoto patients and controls in total as well as separately for males and females.



Conclusions

This study suggests that:

- There seem to be seasonal differences in birth pattern in children and adolescents with Hashimoto thyroiditis
- The effect of certain seasonal factors (viral infections etc.) during fetal development, reflected by these seasonal differences in birth pattern, may contribute to long-term programming of an autoimmune response against the thyroid gland.

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