



Characteristics of Individuals with Coeliac Disease that Present with Other Autoimmune Conditions

Submitted by: Sarah Kiernan from the Coeliac society of Ireland

Introduction

Autoimmune conditions, such as coeliac disease, cause an inappropriate immune response(1, 2). Individuals with an autoimmune condition have an increased risk of developing secondary autoimmune conditions(3). Like coeliac disease, other autoimmune conditions are more prevalent in females than in males (4) but limited research investigates the association between sex and the co-occurrence of coeliac disease and other autoimmune conditions. There is little research investigating age and development of other autoimmune conditions with coeliac disease. This study aims to compare the sex and age of individuals with coeliac disease that present with another autoimmune condition and those that do not present another autoimmune condition.

Method

A survey was designed in survey monkey and circulated to the 3,381 active members of the Coeliac Society of Ireland over a 2-week period.

Participants

Only adults were included in this study. Although the coeliac society comprises of gluten intolerant members, only those with coeliac disease and dermatitis herpetiformis were included.

Survey Questions

Questions asked, members their sex, year of birth, if they had another autoimmune condition, names of autoimmune conditions they had and year of both coeliac disease diagnosis and year of other autoimmune condition diagnosis.

Analysis

Responses were analysed with SPSS version 27.0 software. Categorical variables were summarized by descriptive statistics, including total numbers, averages and percentages with associations were analysed using the chi-square test of independence. Pearson correlation was run to assess the relationship between years since coeliac disease diagnosis and number of other autoimmune conditions diagnosed.

Chart 1 – Prevalence of other autoimmune conditions in a coeliac population across the sexes.

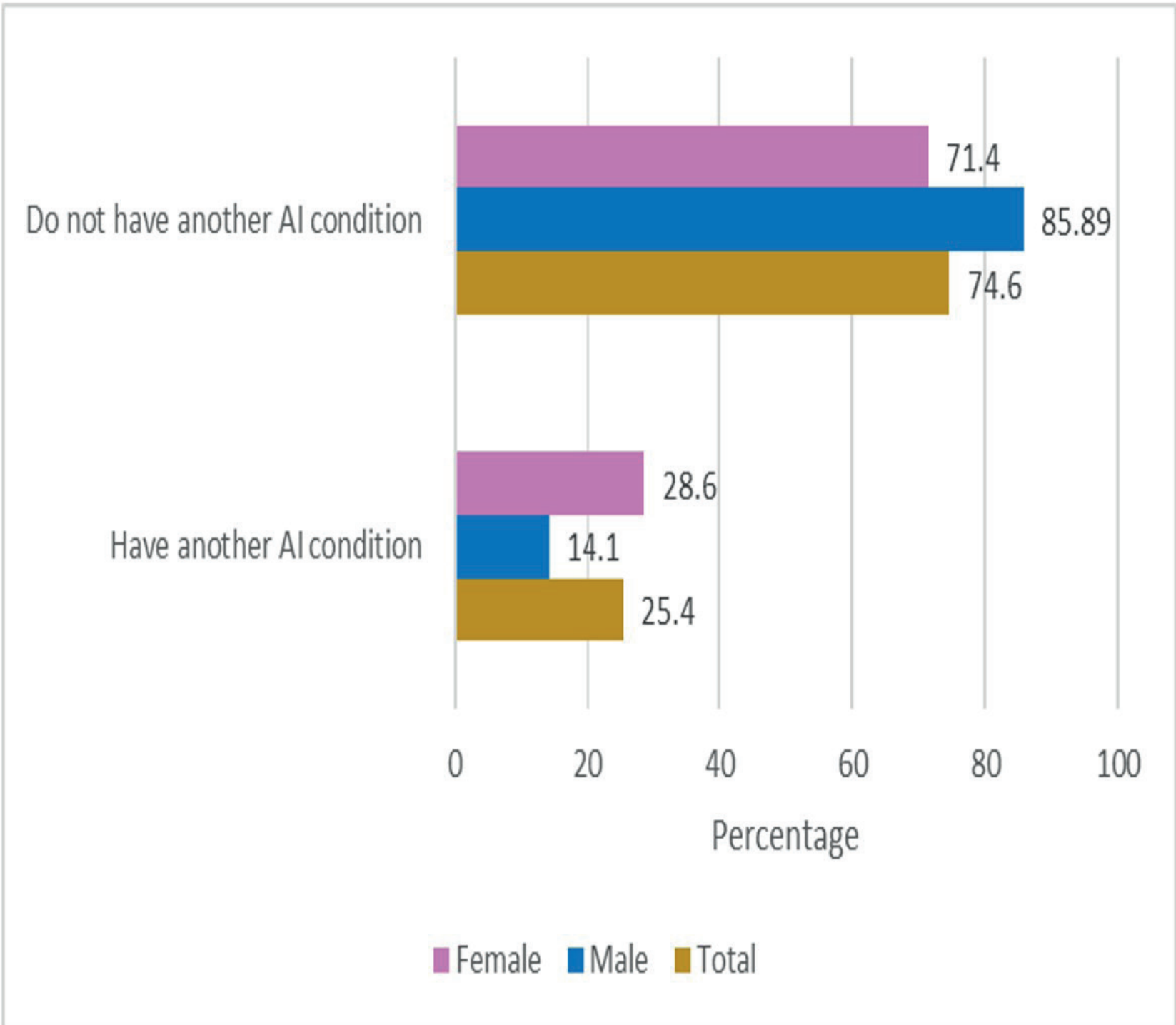


Chart 1; Indication of the number of males, females and total population who reported and did not report diagnosis of another autoimmune condition alongside coeliac disease. Numbers charted are percentages of the female, male and total population.

Chart 2 – Prevalence of other autoimmune conditions in each age group of the population.

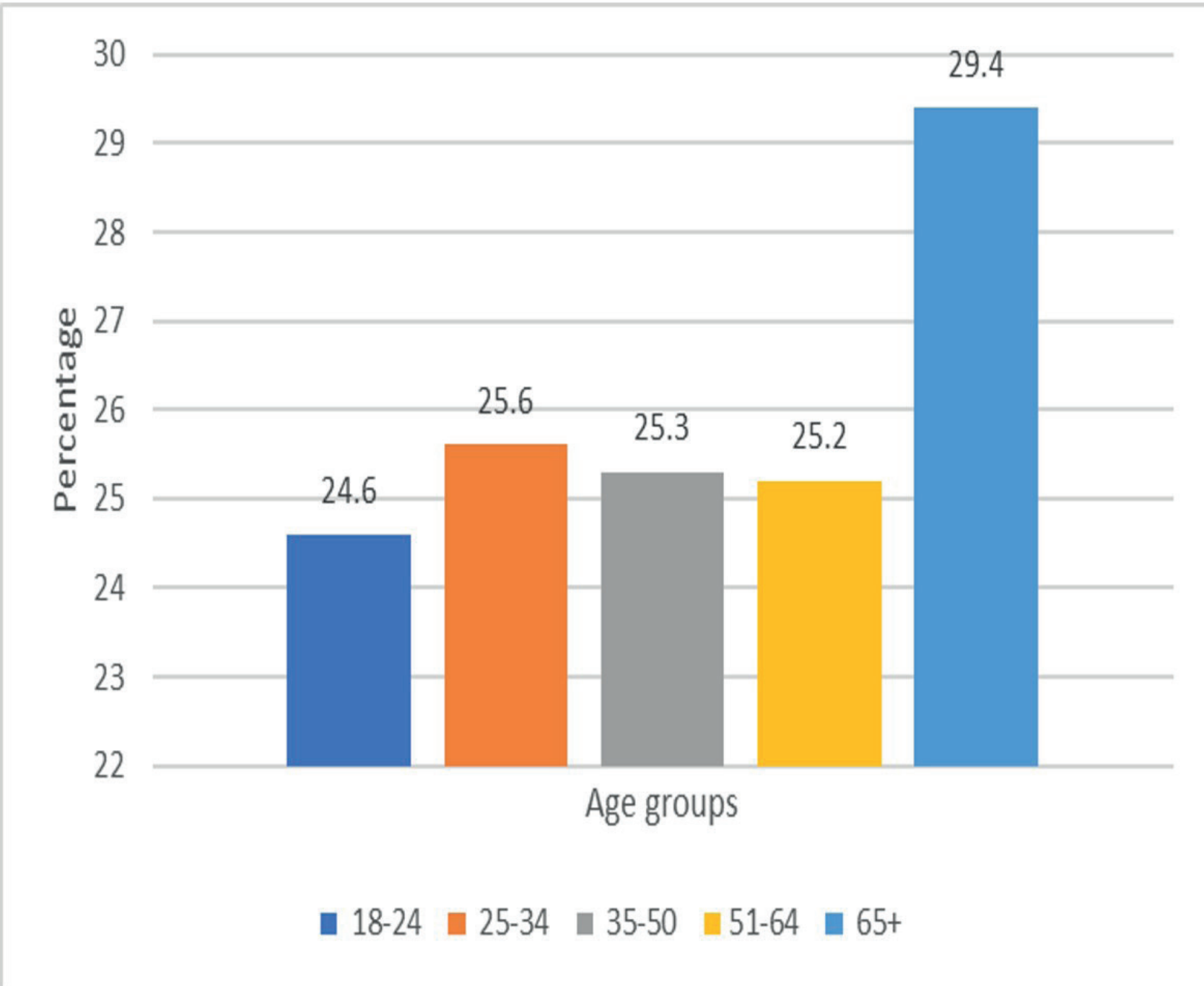


Chart 2; Indication of the proportion of each age group who reported diagnosis of another autoimmune condition alongside coeliac disease. Numbers charted are percentages of each age group.

Results

78% of 677 responders were female. A higher proportion of females (28.6%) reported another autoimmune condition than males (14.1%) with a statistically significant difference between number of males and females reporting another autoimmune condition (p<0.001). There was no significant difference between age group of coeliac disease diagnosis and diagnosis of another autoimmune condition (p=0.986). Highest prevalence of other autoimmune condition was reported in the 65+ coeliac diagnosis age group category (29.6%) which was the oldest age category of coeliac diagnosis. This suggests with age, chances of coeliac disease and another autoimmune condition co-occurring increases. There was a weak negative correlation between years since coeliac disease diagnosis and number of other autoimmune conditions reported (r(675) = -.045, p < .238). Another autoimmune condition was diagnosed on average 2.17 (±16.519) years later than coeliac disease.

Conclusion

In this study, prevalence of co-occurring coeliac disease and a secondary autoimmune disorder is higher in females. This reflects previous literature and prevalence of coeliac disease itself(3). This could be due to genetics(5) or poor health care attendance of males (6, 7) and in turn poor diagnosis of autoimmune conditions in males. Although co-occurrence of coeliac disease and other autoimmune disorders increase with age in this population, results are not strong enough to suggest age impacts the link between coeliac disease and other autoimmune conditions. More research is needed to investigate this.

References

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