Onset of Atopic Comorbidities Relative to Atopic Dermatitis Diagnosis in a Real-World Setting Using an Israeli Claims Database

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BACKGROUND

- Patients with atopic dermatitis (AD) are more likely than the general population to have other type 2-associated conditions, e.g. asthma, allergic rhinitis (AR), and food allergy (FA)[1,2]
- Classically, the atopic march is thought to begin with AD, and progresses to FA, asthma and AR,[1,2] but this may be an oversimplification

OBJECTIVE

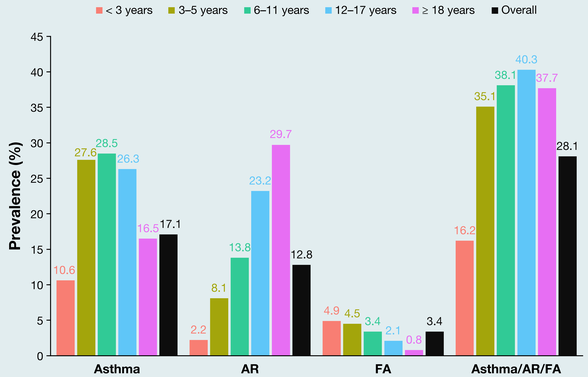
- **To describe the epidemiology of type 2-associated conditions included in the atopic march among patients newly diagnosed with AD in a large healthcare provider database in Israel**

METHODS

- This retrospective cohort study was performed using the Maccabi Healthcare Services (MHS) database in Israel, which includes over 2.5 million members
- Patients with diagnosed AD during the years 2000-2019 were defined by any of the following criteria:
  - ≥2 records of an AD International Classificantion of Diseases (ICD)-9 diagnosis code for AD (691.8) from a general physician or pediatrician, or
  - ≥1 record of an AD ICD-9 diagnosis code from a dermatologist or allergist, or
  - ≥1 AD diagnosis from MHS medication approval center or hospital
- The earliest AD diagnosis was defined as the index date and patients had to have been enrolled for ≥ 12 months pre-index to exclude prevalent AD
- Diagnosis data were obtained during the years 1998-2020 to describe the cumulative prevalence of asthma, AR, and FA pre- and post-AD diagnosis (-1, 0, 1, 5, 10 and 20 years) using Kaplan-Meier (KM) analysis among patients aged < 3, 3-5, 6-11, 12-17 and ≥ 18 years at AD diagnosis
- Cumulative incidence per year post-AD was estimated by combining the observed baseline prevalence with the cumulative incidence from KM

RESULTS

Figure 1. Prevalences of asthma, AR, FA, and asthma/AR/FA diagnosed ever before/at AD diagnosis date among incident AD cases, by age group and overall



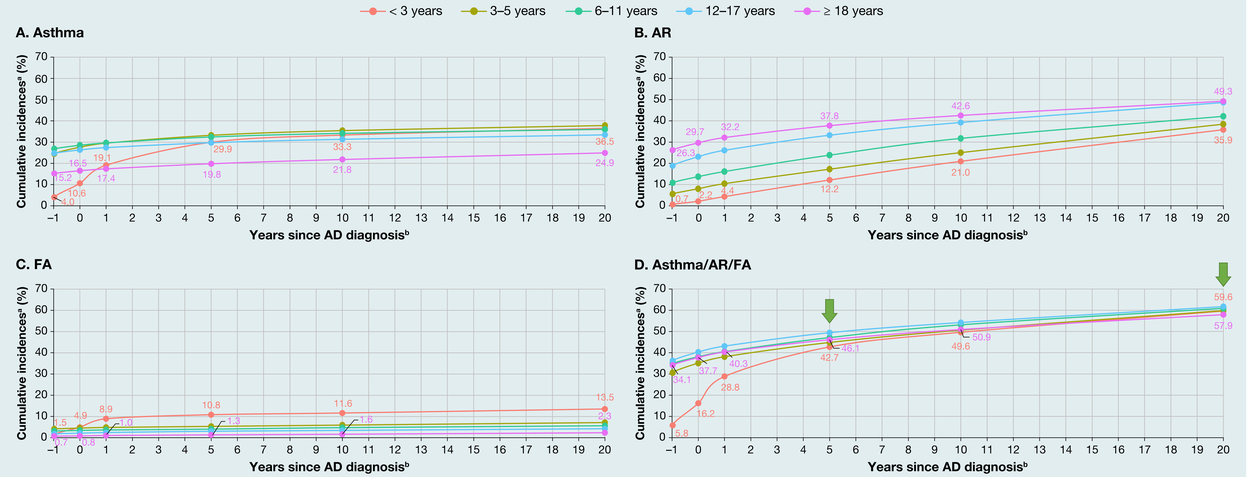
AD, atopic dermatitis; AR, allergic rhinitis; FA, food allergy.

Table 1. Baseline characteristics

	All patients (n = 243,687)
Female, n (%)	125,700 (51.6)
Age at AD diagnosis, median (IQR), years	4.3 (1.1-22.8)
< 3 years, n (%)	106,975 (43.9)
3-5 years, n (%)	30,058 (12.3)
6-11 years, n (%)	28,197 (11.6)
12-17 years, n (%)	11,851 (4.9)
≥ 18 years, n (%)	66,606 (27.3)

AD, atopic dermatitis; IQR, interquartile range.

Figure 2. Cumulative incidences of (A) asthma, (B) allergic rhinitis, (C) food allergy, and (D) the earliest of asthma/allergic rhinitis/food allergy at select time points relative to AD diagnosis, by age group at AD diagnosis



[a]For time >1 year since AD, estimates are based on cumulative incidence from Kaplan Meier. [b]Time points: -1 = 12 months pre-AD; 0 = on AD diagnosis date; 1/5/10/20 = years post-AD diagnosis. AD, atopic dermatitis; AR, allergic rhinitis; FA, food allergy.

CONCLUSIONS

- **Results of this real-world analysis are consistent with previous evidence that AD is primarily a childhood-onset disease**
- **The sharpest increase in type 2-associated conditions was seen in the 5 years post-AD diagnosis among patients diagnosed with AD at age < 3 years**
- **Most adults newly diagnosed with AD who developed another type 2-associated conditions had already done so prior to AD diagnosis, although it is possible that earlier AD diagnoses were not captured**
- **Regardless of age at AD diagnosis, nearly 60% of patients with AD were estimated to have ≥ 1 case of asthma/AR/FA within 20 years of their AD diagnosis**

References: 1. Hill DA, Spergel JM. Ann Allergy Asthma Immunol 2018;120:131-7. 2. Davidson WF, et al. J Allergy Clin Immunol 2019;143:894-913.

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