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#1044

Sleep disturbance in atopic dermatitis: prescribing patterns in a UK population-based study

Children and adolescents with atopic dermatitis and comorbid sleep disturbance are more likely to be prescribed sedating antihistamines, non-sedating antihistamines and melatonin.

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Background & Aims

- **Sleep disturbance** is common in AD[1,2] and impacts on daily life,[3] including wider family.[4]
- Guidelines only recommend **short-term use** of **sedating antihistamines.**[5] Limited evidence for **melatonin.**[6]
- There is little **real-world data** on **prescribing practices**.

Understanding prescribing in paediatric patients with AD and sleep disturbance is important.

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Methods

- **Children and adolescents (aged 2-<18 years)** registered within Clinical Practice Research Datalink (CPRD) Aurum database (01/03/2003 - 01/03/2023).
- **Active AD** cases were identified using at least one AD-specific clinical diagnosis code and 2 x AD treatment codes within 365 days.
- **Sleep disturbance** (SD) was a composite of sleep related clinical codes.

Overall

Active AD with sleep disturbance v **Active AD without sleep disturbance**

Subgroups:

- **AD with comorbid asthma**
- **AD without comorbid asthma**

Clinical and sociodemographic characteristics well balanced between groups

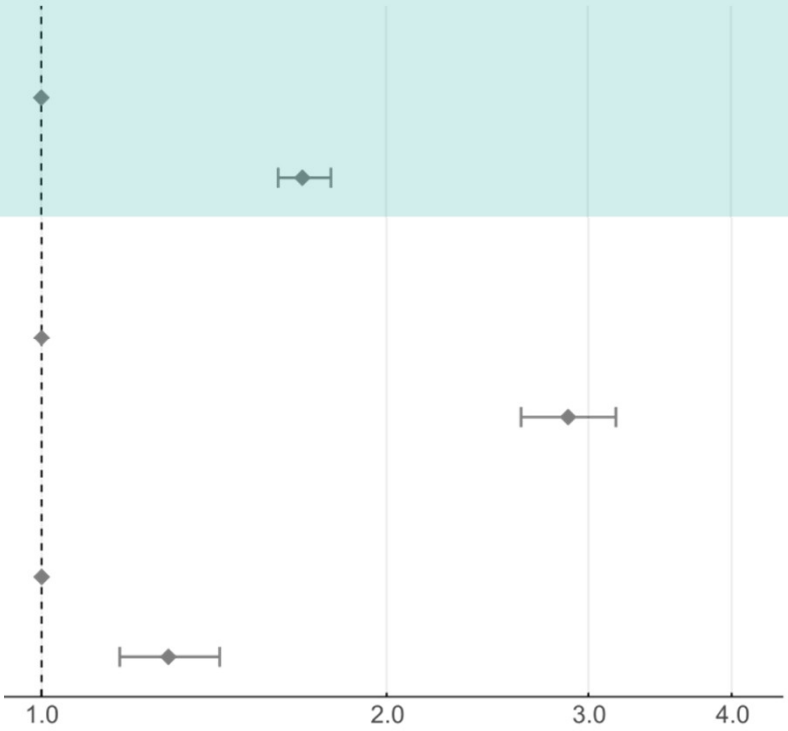
	Children with active AD	Matched controls	SMD[a]
N	643,012	2,546,802	
Age, median (IQR)	3.3 (2.0, 7.8)	3.2 (2.0, 7.6)	0.02
Follow-up, median (IQR)	1.34 (1.0, 2.0)	1.30 (0.9, 2.0)	0.06
Age groups			0.01
2-4	402,913 (63%)	1,606,937 (63%)	
5-11	157,668 (24%)	619,122 (24%)	
12-15	56,717 (9%)	221,309 (9%)	
16-17	25,714 (4%)	99,434 (4%)	
Sex			0.00
Male	325,635 (51%)	1,289,823 (51%)	
Female	317,377 (49%)	1,256,979 (49%)	
Ethnicity			0.00
White	332,557 (52%)	1,316,048 (52%)	
South Asian	69,189 (11%)	274,010 (11%)	
Black	41,565 (6.5%)	164,505 (6.5%)	
Mixed	19,933 (3.1%)	78,754 (3.1%)	
Other	9,416 (1.5%)	37,243 (1.5%)	
Chinese	3,687 (0.6%)	14,043 (0.6%)	
Unknown	166,665 (26%)	662,199 (26%)	

	Children with active AD	Matched controls	SMD[a]
Index of Multiple Deprivation (IMD)			0.00
1 (least)	122,544 (19%)	486,069 (19%)	
2	115,125 (18%)	456,395 (18%)	
3	115,165 (18%)	456,252 (18%)	
4	137,095 (21%)	542,900 (21%)	
5 (most)	152,662 (24%)	603,684 (24%)	
Unknown	421 (<0.1%)	1,502 (<0.1%)	
AD severity at baseline			
Mild	591,672	-	
Moderate	14,466	-	
Severe	36,874	-	
Allergic comorbidities	216,431 (8.5%)	125,298 (19%)	0.32
Allergic rhinitis	62,696 (2.5%)	40,690 (6.3%)	0.19
Asthma	103,714 (4.1%)	60,396 (9.4%)	0.21
Urticaria	57,989 (2.3%)	26,357 (4.1%)	0.10
Food allergy	13,224 (0.5%)	21,871 (3.4%)	0.21

IQR, Interquartile range;
[a]SMD, Standard Mean Difference, an estimate <0.1 indicates no meaningful difference between cases and controls.

Results: sedating antihistamines

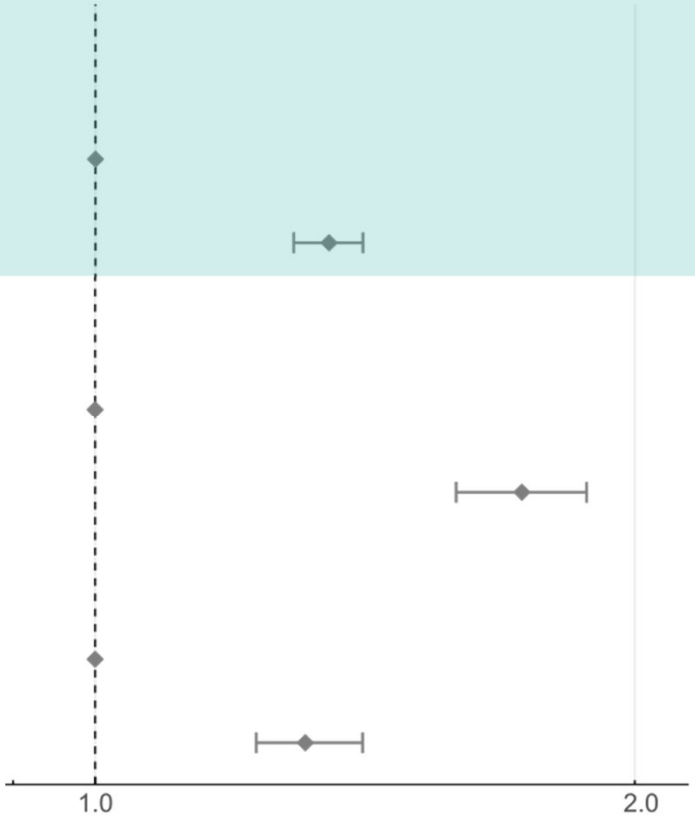
Overall	N	Person -years	Events	aIRR* (95% CI)
AD	66,145	119,603	59,862	1.00 (ref)
AD + SD	16,792	37,866	32,730	1.69 (1.61, 1.79)
No Comorbid Asthma				
AD	16,780	22,263	7,571	1.00 (ref)
AD + SD	5,559	9,669	7,798	2.88 (2.62, 3.17)
Comorbid Asthma				
AD	7,775	15,811	10,516	1.00 (ref)
AD + SD	5,717	15,007	13,083	1.29 (1.17, 1.43)



*Adjusted for age, sex, ethnicity (white vs. non-white ethnicity) and allergic comorbidity (asthma, allergic rhinitis, urticaria, food allergy).

Results: non-sedating antihistamines

Overall	N	Person-years	Events	aIRR* (95% CI)
AD	66,145	119,603	96,240	1.00 (ref)
AD + SD	16,792	37,866	56,862	1.35 (1.29, 1.41)
No Comorbid Asthma				
AD	16,780	22,263	10,051	1.00 (ref)
AD + SD	5,559	9,669	8,516	1.73 (1.59, 1.88)
Comorbid Asthma				
AD	7,775	15,811	23,607	1.00 (ref)
AD + SD	5,717	15,007	26,760	1.31 (1.23, 1.41)

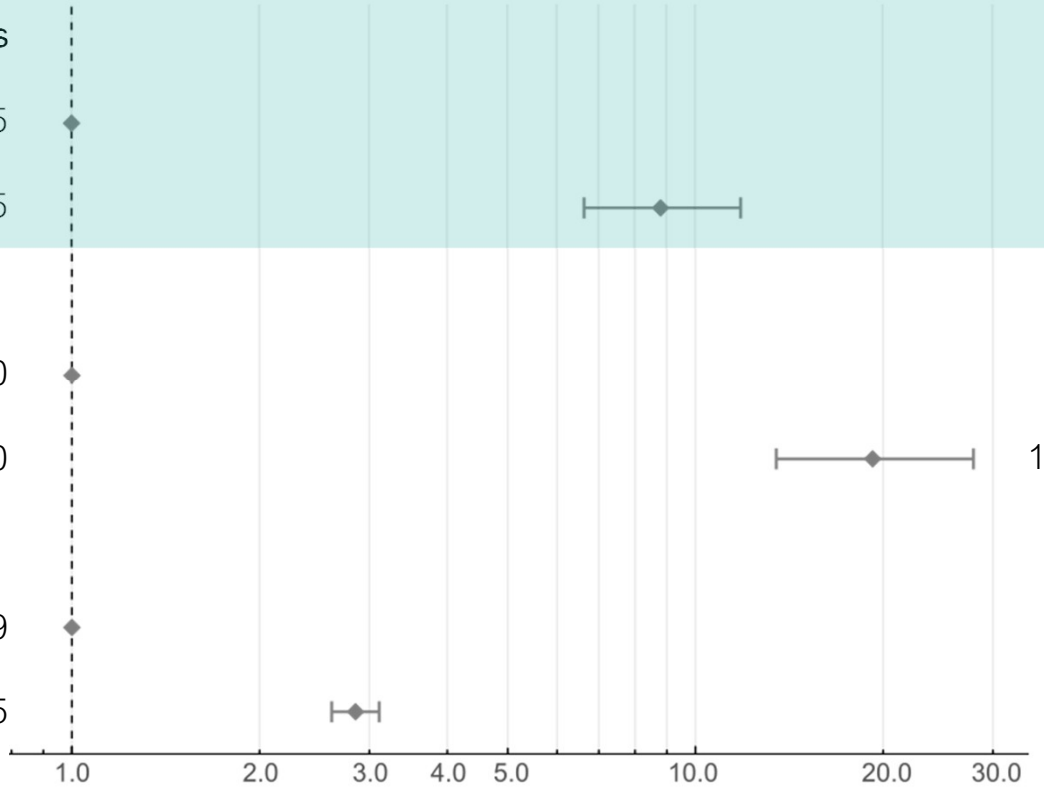


Adjusted Incidence Rate Ratio

*Adjusted for age, sex, ethnicity (white vs. non-white ethnicity) and allergic comorbidity (asthma, allergic rhinitis, urticaria, food allergy).

Results: melatonin

Overall	N	Person-years	Events	aIRR* (95% CI)
AD	66,145	119,603	4,395	1.00 (ref)
AD + SD	16,792	37,866	6,165	8.81 (6.64, 11.84)
No Comorbid Asthma				
AD	16,780	22,263	580	1.00 (ref)
AD + SD	5,559	9,669	3,130	19.24 (13.48, 27.92)
Comorbid Asthma				
AD	7,775	15,811	679	1.00 (ref)
AD + SD	5,717	15,007	1,775	2.85 (2.61, 3.11)



*Adjusted for age, sex, ethnicity (white vs. non-white ethnicity) and allergic comorbidity (asthma, allergic rhinitis, urticaria, food allergy).

Strengths & Limitations

- Population-based
- Validated AD case algorithm
- Detailed codes for sleep disturbances
- Large enough for subgroup analyses

- In UK, treatments also available without prescription.
- Unable to measure sleep duration.
- No clinical codes for AD-related sleep disturbance.

Conclusions

- Paediatric patients with **AD and sleep disturbance** are **more likely to be prescribed:**
  - Sedating antihistamines
  - Non-sedating antihistamines
  - Melatonin
- **Evidence** is needed on the most effective **treatment options for AD-related sleep disturbance** in paediatric patients.

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