

Impact of Dupilumab on Education and Career in Patients With Moderate-to-Severe Atopic Dermatitis

Alexa B. Kimball¹, Min Yang², Bruno Martins², Ashley Holub², Jingdong Chao³, Gaëlle Bégo-Le-Bagousse⁴, Kerry Noonan⁵, Zhixiao Wang³

¹Harvard Medical School, Beth Israel Deaconess Medical Center, Boston, MA, USA; ²Analysis Group, Boston, MA, USA; ³Regeneron Pharmaceuticals Inc., Tarrytown, NY, USA; ⁴Sanofi, Gentilly, France; ⁵Sanofi, Cambridge, MA, USA

Key takeaway

Patients with moderate-to-severe AD reported improvements in career-related aspects of their lives following dupilumab treatment, but minor improvements in education-related aspects, likely due to initiating treatment after education age

Objective

To analyze the impact of uncontrolled moderate-to-severe AD and the effect of dupilumab, a biologic treatment for AD, on patients' education and career

Background

- AD is a chronic systemic disease associated with significant clinical and psychological burden, which could negatively affect patients' education¹ and/or career^{2,3}

Methods

- Adult patients with moderate-to-severe AD enrolled in RELIEVE-AD (a prospective, long-term survey study) who completed the Year 6 survey were invited to participate in qualitative one-on-one interviews lasting up to 60 minutes
- The semi-structured interview consisted of open-ended questions focusing on different domains of life before and after initiating dupilumab, including education, work, training, and career decisions
- Content analysis using ATLAS.ti (version 24) was conducted on the qualitative data obtained from the interviews
- Responses were counted if patients affirmed having the experience

Conclusions

- Patients reported a substantial burden on their education and career due to uncontrolled moderate-to-severe AD
- Following dupilumab treatment, many patients reported a substantial improvement in career-related aspects of their lives, such as improved concentration and work performance
- However, fewer patients reported the impact of dupilumab on education, likely due to the fact that most of them had passed education age by the time they initiated dupilumab
- Due to the long time span between AD diagnosis and dupilumab initiation, it is difficult to quantify missed opportunities in life that may have caused residual, irreversible life course impairment
- Early use of effective treatment in patients with moderate-to-severe AD may help minimize such irreversible effects

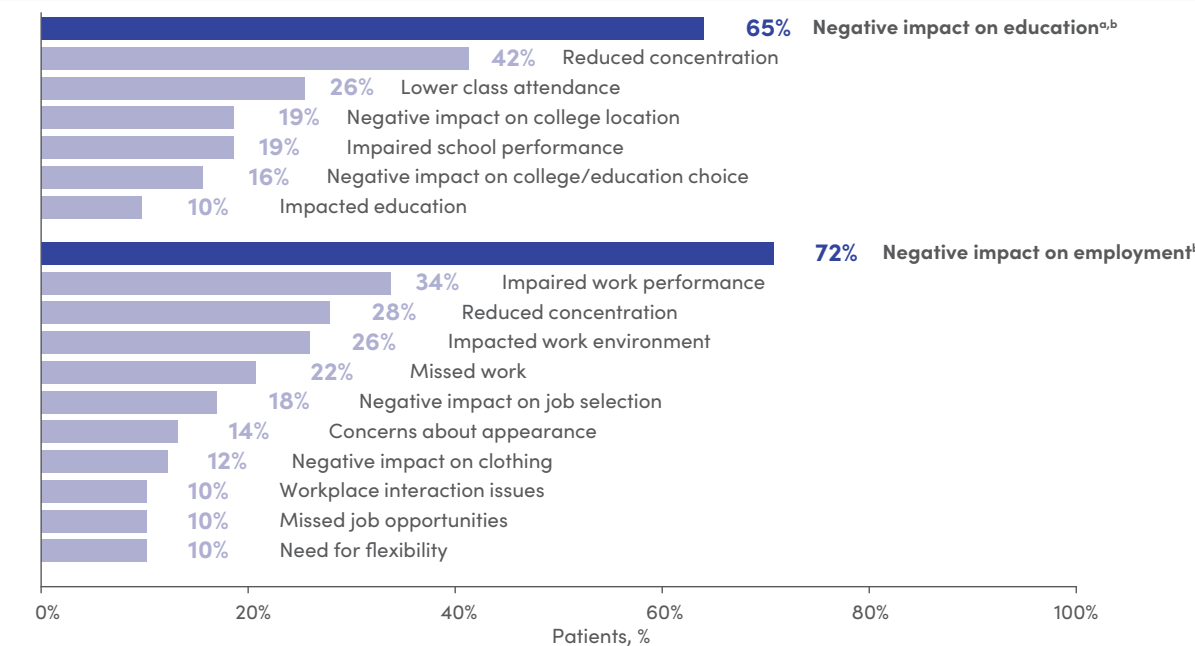
Results

Demographics and medical history

	Interview participants n = 50
Female, n (%)	31 (62.0)
Age at dupilumab initiation, mean (SD), years	45.4 (14.8)
Race, n (%)	
White or Caucasian	36 (72.0)
Age at AD diagnosis, mean (SD), years	26.3 (23.7)
Median (IQR)	16.0 (5.0–51.0)
Range	(1.0–67.0)
Medical history, n (%)	
Non-seasonal allergies ^a	18 (36.0)
Asthma	16 (32.0)
Type 2 comorbidities ^b	27 (54.0)
Hypertension	16 (32.0)
Anxiety	11 (22.0)
Depression	8 (16.0)
Obesity	9 (18.0)
Sleep disorders	4 (8.0)
Anemia	7 (14.0)
Disease control based on ADCT total score ^c , n (%)	
Uncontrolled (total score ≥7) at baseline	47 (94.0)
Uncontrolled (total score ≥7) at Year 6	4 (8.0)

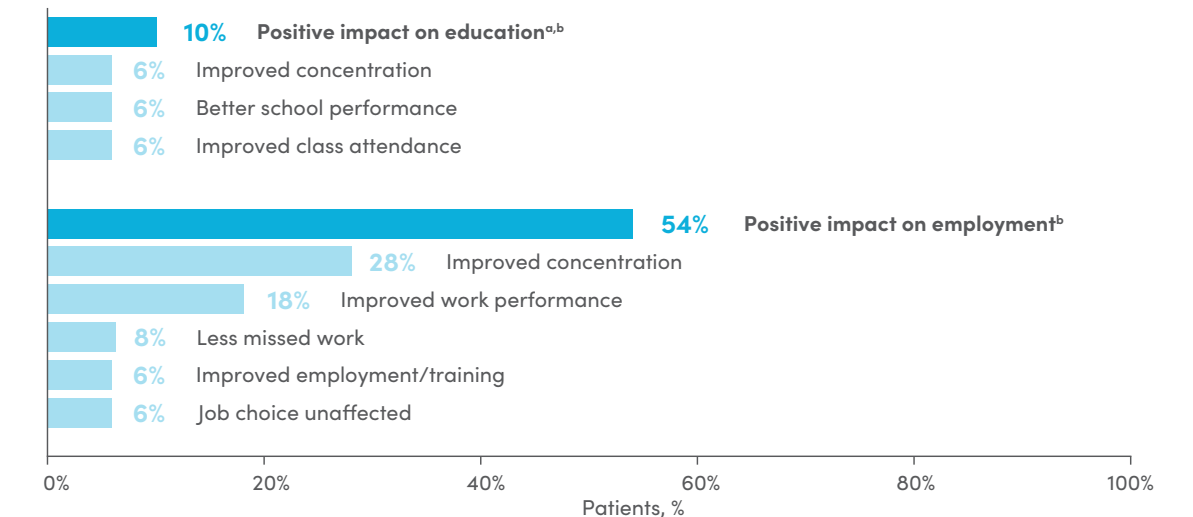
^aAllergic rhinitis or runny nose, allergic conjunctivitis or pink eye, food allergies, allergic urticaria or hives, or other allergies. ^bAsthma or non-seasonal allergies. ^cAssessed using the ADCT, with a score <7 on a scale of 0–24 indicating controlled disease.

Negative impact of AD on education and career before dupilumab



^aCalculated among 31 interviewees who raised the topic or were asked the question. ^bResults presented for responses ≥10%.

Improvement in AD-related impact on education and career after dupilumab treatment



^aCalculated among 31 interviewees who raised the topic or were asked the question. ^bResults presented for responses ≥6%.

Selected patient quotes about AD-related impact on education and career before and after dupilumab treatment

Before dupilumab	After dupilumab
[ID AL00Z1FP] "Yes, it impacted me in that way too, because I was not able to focus in school, so I was constantly itching and even with putting lotion and stuff, I was going to the nurse's office and then having to leave and multiple doctor's appointments."	[ID AL010KN2] "I dropped out of the class that I was in 2 years ago when I had a really bad flare, and that was to do a tax accounting class. This year I was able to finish it with no problem."
[ID AL010I6H] "I definitely would not take any jobs that required me to do things where my skin would be affected, where I would have to constantly wash my hands. That part was tough because I did do some healthcare, in the medical field. It did have some impact because the constant sanitizing and stuff like that was hard on the skin, but I think I dealt with it because it is what I wanted to do."	[ID AL00YGT4] "For example, if I am working, I can focus on working instead of before. It is not like I missed work or anything like that, but it was more like I was always scratching or putting lotion on, so it was time consuming and it was mentally exhausting."
[ID AL0100C9] "I work in an office, so I am obviously typing a lot, and my hands are in front of me, and I talk with my hands, so having something that creates something that makes me feel like I cannot be presentable in a business setting or creates an issue of, the question of what is wrong with this person, which most strangers, I would imagine... or at least I am projecting, would assume start thinking when they would see kind of what looked like chewed up hands, like I had stuck them in an ant hill or something."	[ID AL00ZRLM] "I feel a lot better. I supervise a unit. They give me good feedback. They are very positive. I guess about my performance, so I think that is a good thing. Same with my management. I mean, promotions, I work for a government agency, so those are not necessarily very widely available, so I could not tell you whether or not that was impacted positively or negatively, but I think my relationships at work are a lot better."

Cumulative life course impairment: aspects of life that would have been different if dupilumab had been started earlier

If dupilumab had been started earlier...

[ID AL00ZDIN] "I think I would have made a different career choice. I think I would have had a lot more confidence and been able to care more about my body and myself, and just really connect, and listen to my body more, and I really just segmented my body off from my mind. It was just a different entity. I think it would have... it would have honestly changed a lot. I think I would have pursued jobs and careers that might have been more high paying and had a little more clout to them, and I just did not feel like I was the type of person that could represent a company or a product at that level because of the way I looked."

AD, atopic dermatitis; ADCT, Atopic Dermatitis Control Tool; IQR, interquartile range; SD, standard deviation.