

Longitudinal Course of Cognitive Impairment in Patients with Atopic Dermatitis



Ladonya Jackson-Cowan, PhD, MSc¹, Donald Lei, MS², Muhammad Yousaf, BS²,
Rajeev Chavda, MD³, Sylvie Gabriel, MD³, Jonathan I. Silverberg, MD, PhD, MPH^{2,4}

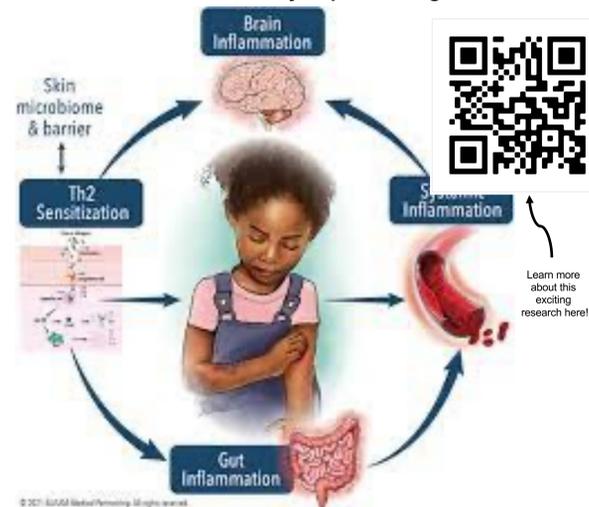
1. The Medical College of Georgia at Augusta University, AU/UGA Medical Partnership, Athens, GA 2. Department of Dermatology, Northwestern University Feinberg School of Medicine, Chicago, IL USA 3. Galderma SA | Rx Strategy & Innovation Group, La Tour-de-Peluz, Switzerland 4. Department of Dermatology, The George Washington University School of Medicine and Health Sciences, Washington, DC USA

Introduction

Atopic dermatitis (AD) is a common inflammatory skin disease. Cognitive dysfunction was recently demonstrated to be increased in adults and children with AD. Though, little is known about the longitudinal course of cognitive impairment in AD and its relationship with pruritus.

Background

1. Cognitive dysfunction is associated with AD severity
2. Reduction in AD severity improves cognitive function



Gap in Knowledge

What is longitudinal course of cognitive dysfunction in AD and its relationship with pruritus?

Aim 1: Characterize the longitudinal course of cognitive impairment in AD

Aim 2: Identify factors associated with persistent impairment

Aim 3: Characterize the relationship between itch and cognitive decline

Methods

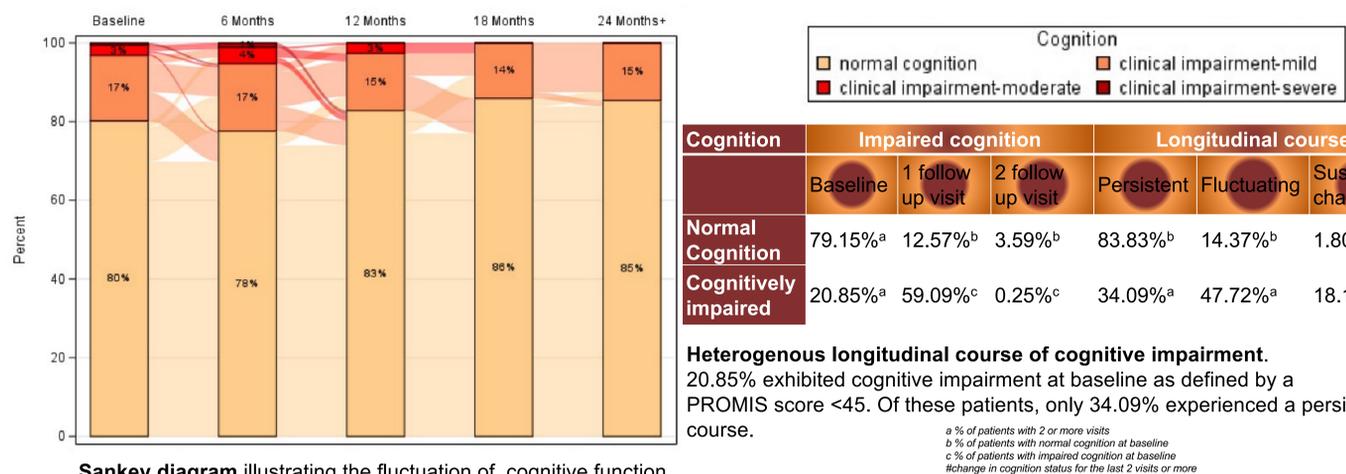
A prospective dermatology practice-based study was performed using questionnaires and evaluation by a dermatologist (n=210). Patients with ≥2 visits were included (mean follow-up time: 318 days). Cognitive function was assessed using the Patient-Reported Outcomes Measurement Information System (PROMIS) Cognitive Function 8-item Short-Form.



Learn more about baseline patient characteristics here!

Results

Trajectory of Cognitive Decline in Atopic Dermatitis



Sankey diagram illustrating the fluctuation of cognitive function.

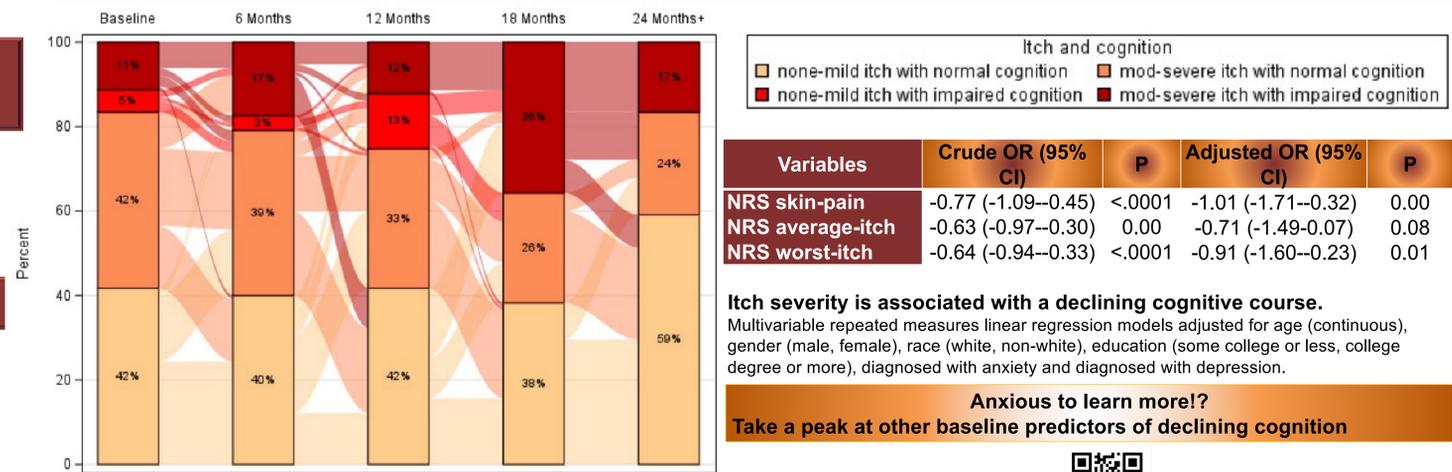
Moderate-Severe PHQ9 Score is Associated with Persistent Cognitive Impairment

Characteristic	Persistently impaired	
	Crude OR (95% CI)	Adjusted OR (95% CI)
PHQ9 score		
None	1. (ref)	1.0 (ref)
Mild	0.40 (0.06-2.51)	0.362 (0.052- 2.541)
Moderate	0.10 (0.02-0.57)	0.037 (0.004- 0.325)
Severe	0.08 (0.01-0.44)	0.005 (0.001- 0.087)

Depression is a risk factor for a persistent course of cognitive impairment.

Moderate or severe PHQ9 score is associated with persistent cognitive impairment, p<0.001.

Itch Severity is Associated with Declining Cognition



Sankey diagram illustrating the fluctuation higher proportions of moderate- severe itch in patients with impaired cognition.

Itch severity is associated with a declining cognitive course.

Multivariable repeated measures linear regression models adjusted for age (continuous), gender (male, female), race (white, non-white), education (some college or less, college degree or more), diagnosed with anxiety and diagnosed with depression.

Anxious to learn more!?

Take a peak at other baseline predictors of declining cognition



Conclusion & Translational Impact

AD is associated with a heterogeneous longitudinal course of cognitive function in adults, with some patients experiencing persistent CI over time. A bidirectional relationship may exist between AD and cognitive dysfunction. Neuroinflammation may influence mood, itch and cognitive dysfunction. Additionally, cognitive dysfunction may worsen AD by reducing adherence to trigger avoidance and treatment. In addition to reducing the physical burden of AS, early and aggressive treatment may improve the quality of life and avert the dynamic interplay of AD inflammation and cognitive dysfunction.