

Survey Results Identifying Clinician Strategies for Therapy Selection for Common Inflammatory Skin Diseases

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Background

- Recent advances in the understanding of the molecular pathways underlying the development of common inflammatory skin diseases including atopic dermatitis (AD) and psoriasis led to the development of multiple novel systemic drugs targeting those pathways.^{1,2}
- As more therapeutics are approved for treatment of AD and psoriasis, it will be important to make informed decisions about each individual patient's therapeutic plan.
- Each patient's molecular profile can impact the efficacy of a drug for that individual. However, literature suggests that patient comorbidities may be the driving factor for determining systemic medications.³ Further, a low biopsy rate for uncertain inflammatory skin disease diagnoses may lead to incorrect diagnosis and treatment in a subset of patients.⁴
- A trial-and-error approach to therapy selection could lead to delay in appropriate treatment of AD or psoriasis and increased cost to healthcare systems.⁵
- Therefore, understanding an individual patient's disease at the molecular level could better inform treatment decisions.
- However, currently, non-invasive molecular tests to guide therapeutic selection are not routinely used for psoriasis and atopic dermatitis.

Objectives

- To determine how clinicians currently choose a systemic therapy for patients with moderate-to-severe atopic dermatitis or psoriasis in the absence of routine molecular data and
- To determine how often the current approach leads to patients switching medications.

Methods

- A 20-question survey was submitted for human subject IRB approval and deemed exempt by Advarra IRB.
- The survey was made available to attendees of the Winter Clinical Dermatology 2022 conference.
- Participation was voluntary and not associated with additional data presentation; respondents that completed the survey were given monetary compensation.

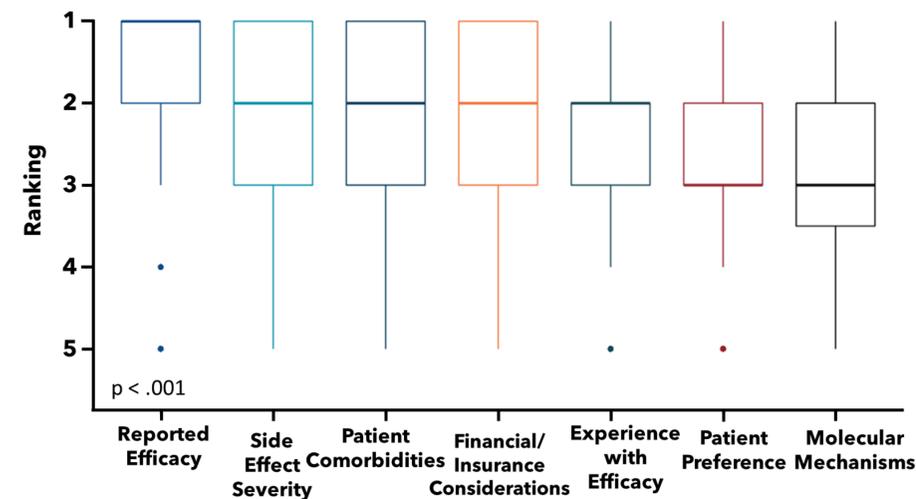
Results

Respondent Demographics

Number years in practice	n respondents (%)	Number patients with moderate-to-severe AD or psoriasis / month	n respondents (%)
Resident/ fellow	73 (27.6)	0	5 (1.9)
1-10 years	88 (33.2)	1-10	88 (33.2)
11-20 years	42 (15.9)	11-24	100 (37.7)
21-30 years	33 (12.5)	25-49	41 (15.5)
>30 years	29 (10.9)	50+	31 (11.7)
Primary specialty	n respondents (%)	Number biologics prescribed for AD or psoriasis / month	n respondents (%)
Dermatologist	235 (88.7)	0	9 (3.4)
Dermpath or Derm/ Dermpath	3 (1.1)	1-10	126 (47.6)
NP/PA	19 (7.2)	11-24	96 (36.2)
Mohs	1 (0.4)	25-49	22 (8.3)
Other specialist	7 (2.6)	50+	12 (4.5)
Practice type	n respondents (%)		
Academic/university	94 (35.4)		
Group practice	102 (38.5)		
Multi-specialty group	28 (10.6)		
Solo practice	40 (15.1)		

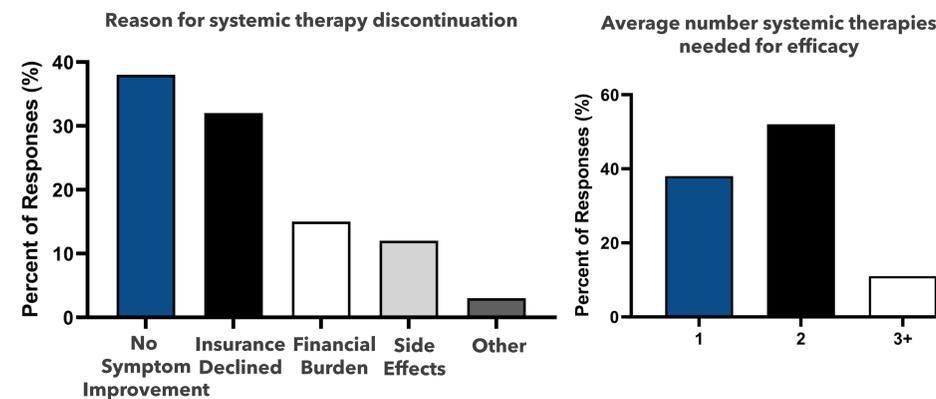
Results

Factors Currently Guiding Therapy Selection



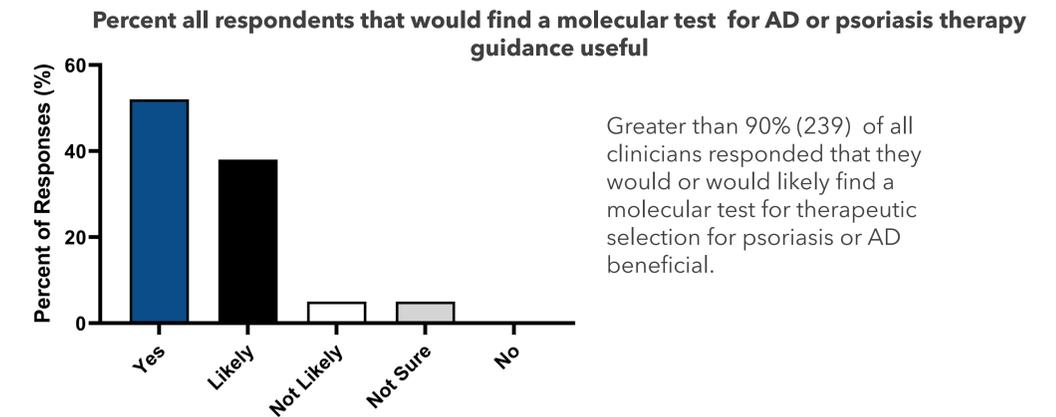
Factors considered when choosing a first systemic therapy for AD or psoriasis were ranked on a scale from 1-5 from most important (1) to least important (5). Ranked results were compiled and Kruskal-Wallis test was used to detect significant differences. "Reported efficacy" was the highest-ranking factor while "molecular mechanism" ranked lower overall in the current decision-making process ($p < .001$).

Changing Systemic Therapy



"No symptom improvement" was the top reason reported for patient discontinuation of systemic medications for AD or psoriasis. Additionally, 62.3% (165) of clinicians surveyed estimated that, on average, 2 or more systemic therapies were needed to find one that was efficacious indicating that lack of efficacy for individual patients contributes to switching systemic therapies.

Clinician Interest in Molecular Test



Conclusions

- In the absence of a molecular test to help guide therapeutic selection, clinicians currently must make empirical decisions based on personal experience and/or the available population-based evidence, which can lead to delays in disease control and increased cost to the healthcare system.
- Clinicians would prefer to have a molecular test to help determine the most efficacious drug for individual patients.
- Results from this survey can be used to inform clinical studies such as the prospective IDENTITY study which is currently enrolling patients with psoriasis and atopic dermatitis to use each patient's molecular data to guide personalized therapeutic selection.

References

- Renert-Yuval Y and Guttman-Yassky E. *J Am Acad Dermatol*. 2020; 124(1):28-35.
- Armstrong A and Read C. *JAMA*, 2020;323(19):1945-1960.
- Kaushik S and Leibold M, *J Am Acad Dermatol*, 2019; 80(1):27-40.
- Aggarwal P et al, *Dermatol Ther* 2022; 12, 611-614.
- Mathur S and Sutton J, *Biomed Rep*. 2017; 7(1):3-5.

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