Health utility changes after biologic induction therapy in patients with varying severity of psoriasis

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Introduction

- Psoriasis is a chronic autoimmune skin condition causing red, inflamed, and scaly patches, significantly impacting emotional health, social interactions, and quality of life in patients with moderate to severe psoriasis (msPsO).[1,2]
- Biologic therapies have shown efficacy in managing moderate to severe psoriasis, improving both clinical symptoms and health-related quality of life. However, the extent to which disease severity impacts health utility improvements post-biologic therapy remains unclear.

Objective

- To assess the impact of disease severity on health utility changes after biologic induction therapy for psoriasis.

Methods

- **Study design:** single-center retrospective cohort study.
- **Study settings:** Xiangya Hospital of Central South University.
- **Observation time:** from January 2019 to May 2024.

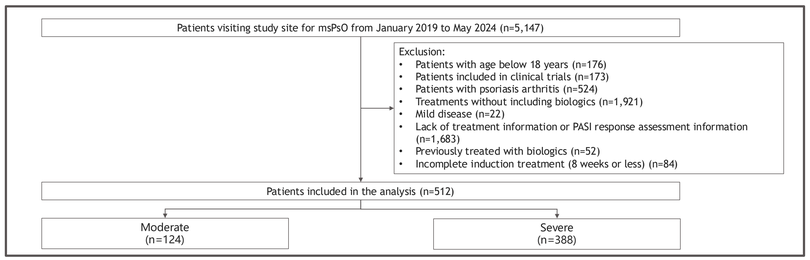
Inclusion Criteria	Exclusion Criteria
• Adult patients diagnosed with msPsO. • Patients received biologic treatments. • Patients with both DLQI and PASI scores before and after induction therapy with biologics.	• Patients with psoriasis arthritis or other autoimmune diseases • Patients were previously treated with biologics. • Patients with incomplete induction therapy (≤8 weeks). • Patients were previously treated with biologics. • Patients with incomplete induction therapy (≤8 weeks).

- **Data Collection:** Demographics, socioeconomics, skin lesion location, comorbidities, Psoriasis Area and Severity Index (PASI), Dermatology Life Quality Index (DLQI).
- **Data analysis:** Health utility before and after induction therapy was estimated from DLQI using a mapping algorithm for the EuroQol 5-Dimension 5-Level (EQ-5D-5L) utility index. Patients were stratified by PASI response status to compare post-induction utility with baseline utility using the Wilcoxon rank-sum test for moderate and severe psoriasis, respectively. Multivariate linear regression was conducted to confirm the impact of PASI 75 or above on health utility changes.

Results

- A total of 512 msPsO patients were included in the data analysis. The flowchart of patient inclusion is illustrated in **Figure 1**.

Figure 1. Patient inclusion flowchart.



Patient characteristics

- There were no significant differences in demographics between patients stratified by disease severity (moderate vs. severe). However, significance was identified between the two groups of patients for the distribution of skin lesion areas and baseline health utility (**Table 1**).

Table 1. Patient characteristics of the moderate cohort and severe cohort.

Characteristics	Moderate (n=124)	Severe (n=388)	P value
Age, mean (SD), y	39.0 (14.0)	40.0 (13.7)	0.375
Male sex, %	64.5%	69.8%	0.266
Education, %			
Below high school	23.4%	39.7%	***<0.001***
High school	19.4%	18.8%	0.894
College and above	56.5%	41.0%	***0.003***
Unknown	0.8%	0.5%	0.566
Skin lesion area, %			
Lower limbs	77.4%	74.7%	0.547
Upper limbs	75.8%	73.2%	0.565
Face and neck	21.8%	36.1%	***0.003***
Hands and feet	12.1%	24.0%	***0.005***
Comorbidities, %			
Diabetes	7.3%	2.3%	***0.020***
PASI, mean (SD)	6.2 (2.0)	13.8 (7.9)	***<0.001***
BSA, mean (SD), %	4.8 (2.5)	17.8 (13.9)	***<0.001***
DLQI, mean (SD)	5.6 (2.2)	11.3 (5.4)	***<0.001***
EQ-5D-5L utility, mean (SD)	0.902 (0.027)	0.833 (0.065)	***<0.001***

BSA: body surface area; SD: Standard deviation

Utility values by PASI response status

- When compared to the baseline health utility prior to treatment, patients with PASI 75 or above could have significantly increased health utility, irrespective of disease severity(**Figure 2 and 3**).
- The improvement of quality of life associated with PASI 90 and 100 was relatively limited when compared to PASI 75.

Figure 2. Utility values before and after induction therapy by PASI response status in patients with moderate psoriasis.

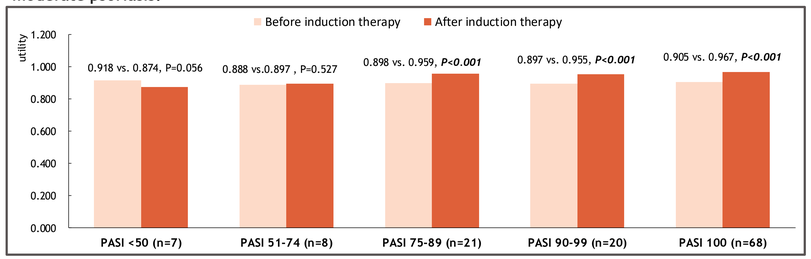
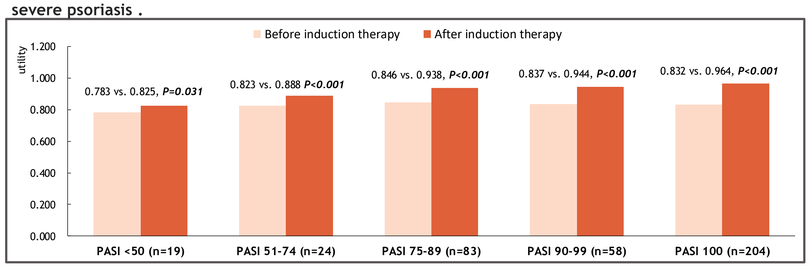


Figure 3. Utility values before and after induction therapy by PASI response status in patients with severe psoriasis .



Multivariate linear regression

- Multivariate linear regression analyses confirmed the significant improvement of health utility in patients with PASI 75 or above when compared to PASI 50, irrespective of disease severity (**Figure 4 and 5**).

Figure 4. Impact of PASI response on health utility after induction therapy in patients with moderate psoriasis.

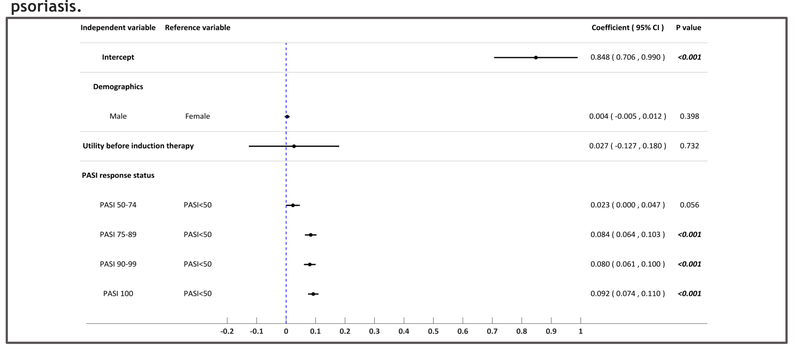
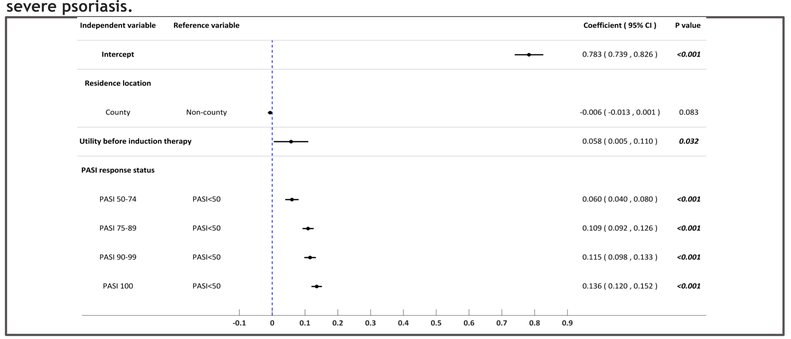


Figure 5. Impact of PASI response status on health utility after induction therapy in patients with severe psoriasis.



Conclusions

- Psoriasis patients achieving PASI 75 or above after biologic induction therapy could gain significant improvement of quality of life, irrespective of disease severity.
- The study highlights that achieving targets of PASI 90 or higher is unlikely to substantially incrementally improve quality of life compared to patients achieving PASI 75.

References

1. Raharja A, et al. Clin Med (Lond). 2021;21(3):170-173. 2. Armstrong AW, et al. JAMA. 2020;323(19):1945-1960.

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Conflicts of interest

- Wendong Chen and Liang Tan are the employees of Changsha Normin Medical Technology Ltd, which received funding from Bristol Myers Squibb to conduct this study. Xingzhi Wang is the employees of Bristol Myers Squibb. Other authors have none to declare.

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