BACKGROUND

- Moderate-to-severe plaque psoriasis (psoriasis) is a chronic skin disease that causes skin cells to grow too quickly, resulting in thick patches of skin referred to as plaques.\(^1\)
- The total cost for the treatment of this disease includes direct (therapy of the patient) and indirect (tangible, secondary) cost components such as lost wages.\(^2\)
- Indirect cost data are necessary for cost-effectiveness studies from a societal and employer's perspectives. Unfortunately, cost-effectiveness studies from these perspectives are limited because work productivity loss data are rarely collected in psoriasis clinical trials.
- Previous research suggests the possibility of estimating indirect costs via work productivity loss data from patients with psoriasis.\(^3\)

OBJECTIVE

- To estimate indirect costs of moderate-to-severe plaque psoriasis dependent on the level of psoriasis improvement (Psoriasis Activity and Severity Index [PASI] change from baseline) due to treatment from both societal and employers' perspectives in Germany.

METHODS

- Work Productivity and Activity Impairment Questionnaire: Psoriasis (WPAI:PSO) data from a recent clinical trial (CLEAR) were analyzed by PASI response at 16 weeks.
  - The WPAI is a quantitative measure of health-related work productivity loss, with a 1-week recall period, that assesses work time missed (absenteeism), reduced-on-the-job effectiveness (presenteeism), and daily activity impairment.\(^4\)
  - The WPAI can be adapted to specific disease areas and health problems. The psoriasis adaptation of the questionnaire, the WPAI:PSO, is used to collect patient responses regarding the effect of psoriasis on their ability to work and perform regular activities.\(^5\)
  - The CLEAR study (CAiN457A2317) is a randomized, double-blind, placebo-controlled, multicenter clinical trial of secukinumab compared with ustekinumab in patients with plaque-type psoriasis. Primary and secondary endpoints are PASI 90, PASI 75, and Dermatology Life Quality Index response.\(^6\)
  - PASI change from baseline (PASI response) was categorized as PASI 0-50, 50-74, 75-89, and ≥ 90, where 0 to 50 indicates a 0% to 50% improvement in PASI score from baseline, 50 to 74 indicates a 50% to 74% improvement in PASI score from baseline, and so on.
  - PASI response is a weighted measurement of the average redness, thickness, and scaliness of psoriasis lesions used to assess the severity of the disease. PASI 75 response (75%-100% improvement in PASI score) is recognized as a clinically meaningful endpoint in clinical trials for psoriasis treatment.\(^7\)
  - While PASI 75 response is the current treatment goal in guidelines, the European Medicines Agency suggests that the best evidence of efficacy is shown in patients who achieve PASI 90 response.\(^8\)
  - The European S3-guidelines suggest that PASI 90 response may be discussed as a treatment goal for the future.\(^9\)
  - An analysis of the benefits of achieving skin clearing improvements in patients with psoriasis suggests that those with PASI 90 response achieve greater health-related quality-of-life improvements than those with PASI 75 response.\(^8\)
  - Work impairment by PASI score data (Table 1) were obtained from reported work impairment due to psoriasis for CLEAR trial subjects who were employed at baseline.\(^10\)
  - All analyses were conducted on pooled secukinumab and ustekinumab data to generate indirect cost estimates based on improvement of the PASI score rather than on treatment.

RESULTS

- Overall work impairment due to psoriasis decreased with greater skin clearance in the CLEAR study, with the majority of impairment being related to presenteeism rather than absenteeism (Figure 1).
- Employment parameter inputs (Table 2) were obtained from the CLEAR study and German national employment averages for full- versus part-time employment, the number of hours worked per week, and hourly wages.

LIMITATIONS

- Short-term data were used to project long-term costs.
- Wages for the general population were assumed to be similar to wages for the psoriasis population.
- The percentage of the patients with psoriasis employed obtained from CLEAR trial data may not be representative of real-world employment percentages of the entire psoriasis population.
- The simple regression predicting indirect costs as a function of improvement of PASI score was conducted on summary statistics rather than patient-level data.

CONCLUSION

- Work impairment in psoriasis is significant and dominated by presenteeism.
- There is a relationship between PASI response and work impairment, which suggests there is a work and cost benefit of clearing skin beyond PASI 75 response.
- PASI 90 response is linked to a prominent increase in workplace productivity and reduction in indirect costs from both a societal and employer perspective.

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Please see handout for complete reference list.