

Assessing clinical features, disease severity and work productivity in pustular psoriasis: An analysis from the PPBest registry



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Introduction

Palmoplantar pustulosis (PPP), acrodermatitis continua of Hallopeau (ACH), and generalized pustular psoriasis (GPP) are chronic pustular skin diseases.¹⁻² While PPP and ACH are localized forms, with PPP affecting the palms and soles and ACH the fingers and toes, including the nail apparatus, GPP is a very severe disease affecting the entire integument.¹⁻² Compared to plaque psoriasis, we have limited knowledge of the disease characteristics, comorbidities, quality of life and impact on productivity of PPP, ACH and GPP.

Methods

The  registry is a non-interventional database monitoring adult patients with the pustular diseases PPP, ACH and GPP. Disease characteristics, comorbidities, disease severity, treatment, and quality of life were recorded at baseline and at follow-up visits across five German university centers. The impact of pustular psoriasis on work productivity and daily activities was assessed using the Work Productivity and Activity Impairment (WPAI) index, and associations with disease activity scores, including the Palmoplantar Pustular, and Generalized Pustular Psoriasis Area and Severity Index (PPPASI, GPPASI), and the Dermatology Life Quality Index (DLQI), were explored.

Results

A total of 113 patients (83.2% female) were included: 92 patients with PPP, 16 with GPP, and 5 with ACH. The average age was 58.5 years. The mean baseline scores for PPPASI, GPPASI, PPPASI (only nails) and DLQI were 8.6, 6.5, 2.5 and 9.3, respectively. At the time of the study, a total of 88 patients (77.9%) were receiving systemic therapy, of whom 39 patients (44.3%) were treated with non-biological agents and 49 patients (55.7%) with biological agents. Baseline WPAI scores reflected significant productivity impairment, with absenteeism averaging 21.0%, presenteeism 23.3%, overall work impairment 16.6%, and activity impairment 39.1%. PPPASI showed significant associations with absenteeism ($r = 0.385$, $p = 0.022$), presenteeism ($r = 0.454$, $p = 0.004$), and work impairment ($r = 0.409$, $p = 0.018$). DLQI similarly correlated with WPAI scores, particularly absenteeism ($r = 0.311$, $p = 0.031$), presenteeism ($r = 0.611$, $p < 0.001$), work impairment ($r = 0.527$, $p < 0.001$), and activity impairment ($r = 0.840$, $p < 0.001$).

Characteristics	n (%)
In total	113
PPP	92 (81.4)
GPP	16 (14.2)
ACH	5 (4.4)
Female	94 (83.2)
Male	19 (16.8)
Age, mean (SD)	58.5 (11.7)
BMI, mean (SD)	23.3 (13.6)
Comorbidities	
Type 1/2 diabetes	15 (13.3)
Depression	16 (14.2)
Musculoskeletal disorders ^a	22 (19.5)
In PPP	17 (18.5)
In GPP	3 (18.8)
In ACH	1 (20.0)
Plaque psoriasis ^a	44 (38.9)
In PPP	38 (41.3)
In GPP	4 (25.0)
In ACH	2 (40.0)
Smoking status	
Current smoker	23 (20.4)
Ex-smoker	20 (17.7)
Never smoker	70 (61.9)
Alcohol use disorder	
Current alcohol use disorder	9 (8.0)
Occasional alcohol use	59 (52.2)
No alcohol use disorder	38 (33.6)
Disease activity scores and PROs at baseline	
PPPASI, mean (SD)	8.6 (8.2)
min. – max.	0.0 – 35.4
GPPASI, mean (SD)	6.5 (10.3)
min. – max.	0.0 – 33.8
PPPASI (only nails), mean (SD)	2.5 (1.7)
min. – max.	0.0 – 4.0
DLQI, mean (SD)	9.3 (8.4)
min. – max.	0 – 30
NRS pain, mean (SD)	3.3 (3.2)
NRS pruritus, mean (SD)	3.8 (3.4)
EQ-5D, mean (SD)	65.9 (25.1)
min. – max.	0 – 100
PNQ, mean (SD)	67.3 (27.3)
min. – max.	0 – 100
PBQ, mean (SD)	38.5 (28.3)
min. – max.	0 – 100
WPAI at baseline	
Absenteeism, %	21.0 (34.8)
Presenteeism, %	23.3 (30.6)
Overall work impairment, %	16.6 (25.4)
Overall activity impairment, %	39.1 (35.4)
Current systemic treatment	88 (77.9)
Non-biologics ^b	39 (44.3)
Biologics ^c	49 (55.7)

Table 1. Cohort characteristics. Characteristics of PPP patients at the time of inclusion in the PPBest registry.
^a The percentages given refer to the PPP, GPP, and ACH cohorts, respectively.
^b Most commonly apremilast (n = 12), followed by methotrexate (n = 11) and retinoids (n = 9).
^c Most commonly guselkumab (n = 15), followed by bimekizumab, ixekizumab and adalimumab (n = 6 each).
Abbreviations: ACH, acrodermatitis continua suppurativa Hallopeau; ACHPASi, Acrodermatitis Continua of Hallopeau Psoriasis Area and Severity Index; DLQI, Dermatology Life Quality Index; EQ-5D, European Quality of Life 5 Dimensions; GPP, generalized pustular psoriasis; GPPASI, Generalized Pustular Psoriasis Area and Severity Index; max., maximum; min., minimum; NRS, numeric rating scale; PBQ, Patient Benefit Questionnaire; PPP, palmoplantar pustulosis; PPPASI, Palmoplantar Pustulosis Psoriasis Area and Severity Index; PNQ, Patient Needs Questionnaire; PRO, patient-related outcome; SD, standard deviation; WPAI, Work Productivity and Activity Impairment.

	PPPASI	DLQI	
Absenteeism	0.385 0.022 35	0.311 0.031 48	correlation coefficient p-value n
Presenteeism	0.454 0.004 39	0.611 < 0.001 52	correlation coefficient p-value n
Overall work impairment	0.409 0.018 33	0.527 < 0.001 46	correlation coefficient p-value n
Overall activity impairment	0.265 0.082 44	0.840 < 0.001 58	correlation coefficient p-value n

Table 2. Spearman’s rho correlation analyses between WPAI score, PPPASI, and DLQI. Significant values are shown in bold. **Abbreviations:** DLQI, Dermatology Life Quality Index; PPPASI, Palmoplantar Pustulosis Psoriasis Area and Severity Index.

Conclusion

Our study shows that work productivity and daily activities are reduced in patients with pustular psoriasis. Correlations between WPAI, PPPASI, and DLQI at baseline of the PPP patients in our study indicate that a higher disease burden is associated with greater productivity and activity impairment. These findings underscore the importance of effective disease management to reduce productivity losses and enhance quality of life.

