Supplementary materials

Drug survival, safety and effectiveness of biologics in older patients with psoriasis, a comparison with younger patients, a BioCAPTURE registry study

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Table S1. Associations with drug survival in patients aged < 65 years.

Variables	**Discontinuation for all reasons** *Event = ineffectiveness, AE, ineffectiveness + AE, other reasons, death* *HR [95% CI]*		**Discontinuation due to ineffectiveness** *Event = ineffectiveness, ineffectiveness + AE* *HR [95% CI]*		**Discontinuation due to adverse events** *Event = AE, ineffectiveness + AE* *HR [95% CI]*	
	Univariate	*Multivariable*	*Univariate*	*Multivariable*	*Univariate*	*Multivariable*
Age at start of biologic	0.994 [0.982-1.004] p-value 0.235		1.000 [0.987-1.013] p-value 0.989		1.014 [0.995-1.033] p-value 0.147	
Age at onset of psoriasis	1.000 [0.991-1.010] p-value 0.993		0.999 [0.987-1.011] p-value 0.861		1.010 [0.993-1.026] p-value 0.240	
Female sex	**1.452 [1.172-1.798]** **p-value 0.001**	**1.474 [1.178-1.845]** **p-value 0.001**	**1.418 [1.074-1.872]** **p-value 0.014**	**1.374 [1.008-1.874]** **p-value 0.044**	**1.687 [1.146-2.485]** **p-value 0.008**	**1.824 [1.226-2.714]** **p-value 0.003**
Body mass index	**1.026 [1.009-1.044]** **p-value 0.003**	**1.022 [1.004-1.040]** **p-value 0.015**	**1.032 [1.010-1.055]** **p-value 0.005**	**1.043 [1.021-1.065]** **p-value <0.001**	**1.032 [1.002-1.063]** **p-value 0.039**	
Psoriatic arthritis	1.212 [0.958-1.534] p-value 0.109		**1.362 [1.010-1.837]** **p-value 0.043**		1.193 [0780-1.824] p-value 0.416	
Biologic naivety	0.884 [0.712-1.098] p-value 0.266		0.815 [0.616-1.078] p-value 0.151		0.770 [0.520-1.141] p-value 0.193	
Family history of psoriasis	0.896 [0.711-1.130] p-value 0.355		0.837 [0.622-1.125] p-value 0.238		0.808 [0.538-1.215] p-value 0.306	
First-degree family history	0.937 [0.750-1.169] p-value 0.562		0.803 [0.602-1.071] p-value 0.135		1.018 [0.687-1.510] p-value 0.928	
Baseline PASI	1.004 [0.990-1.018] p-value 0.579		1.019 [1.002-1.037] p-value 0.031		0.995 [0.969-1.022] p-value 0.715	
CCI-score	**1.142 [1.013-1.288]** **p-value 0.030**	**1.168 [1.036-1.316]** **p-value 0.011**	1.137 [0.971-1.331] p-value 0.110		**1.394 [1.181-1.646]** **p-value <0.001**	**1.404 [1.178-1.673]** **p-value <0.001**
Treatment class[1]						
• IL-12/23	**0.513 [0.383-0.686]** **p-value <0.001**	**0.516 [0.382-0.697]** **p-value <0.001**	**0.432 [0.289-0.645]** **p-value <0.001**	**0.414 [0.265-0.646]** **p-value <0.001**	**0.407 [0.227-0.732]** **p-value 0.003**	**0.378 [0.205-0.698]** **p-value 0.002**
• IL-17	1.148 [0.766-1.722] p-value 0.504	1.292 [0.847-1.973] p-value 0.235	1.244 [0.752-2.057] p-value 0.395	1.404 [0.817-2.412] p-value 0.220	1.210 [0.65-2.418] p-value 0.590	1.447 [0.722-2.902] p-value 0.298
• IL-23	0.693 [0.342-1.405] p-value 0.309	0.388 [0.144-1.045] p-value 0.062	0.578 [0.213-1.563] p-value 0.280	0.381 [0.093-1.554] p-value 0.179	0.258 [0.036-1.856] p-value 0.178	0.302 [0.042-2.184] p-value 0.236

Abbreviations: AE, Adverse Events; HR, Hazard Ratio; CI, confidence interval; PASI, Psoriasis Area and Severity Index; CCI, Charlson Comorbidity Index; IL, Interleukin. A p-value of <0.05 was considered significant. In bold statistically significant HRs. [1] Reference category: TNF-α inhibitors.

Table S2. Associations with drug survival in patients aged ≥65.

Variables	**Discontinuation for all reasons** *Event = ineffectiveness, AE, ineffectiveness + AE, other reasons, death*	**Discontinuation due to ineffectiveness** *Event = ineffectiveness, ineffectiveness + AE*	**Discontinuation due to adverse events** *Event = AE, ineffectiveness + AE*
	HR [95% CI]	*HR [95% CI]*	*HR [95% CI]*
Age at start of biologic	0.983 [0.910-1.062] p-value 0.656	0.950 [0.867-1.041] p-value 0.274	1.022 [.881-1.185] p-value 0.771
Age at onset of psoriasis	1.007 [0.991-1.023] p-value 0.392	0.999 [0.982-1.017] p-value 0.937	1.019 [0.985-1.053] p-value 0.272
Female sex	1.015 [0.578-1.783] p-value 0.958	1.089 [0.577-2.054] p-value 0.793	2.890 [0.870-9.601] p-value 0.083
Body mass index	0.986 [0.924-1.053] p-value 0.679	0.958 [0.886-1.037] p-value 0.291	1.086 [0.967-1.220] p-value 0.163
Psoriatic arthritis	0.939 [0.469-1.881] p-value 0.859	1.024 [0.471-2.226] p-value 0.952	0.639 [0.136-3.008] p-value 0.571
Biologic naivety	0.790 [0.450-1.388] p-value 0.412	0.917 [0.476-1.766] p-value 0.795	0.755 [0.240-2.380] p-value 0.631
Family history of psoriasis	0.740 [0.412-1.329] p-value 0.314	1.100 [0.546-2.217] p-value 0.789	0.305 [0.092-1.013] p-value 0.053
First-degree family history	0.719 [0.42-1.286] p-value 0.266	0.936 [0.481-1.825] p-value 0.847	0.414 [0.125-1.377] p-value 0.151
Baseline PASI	1.019 [0.972-1.068] p-value 0.427	1.027 [0.975-1.082] p-value 0.320	1.032 [0.947-1.124] p-value 0.470
CCI-score	1.019 [0.853-1.217] p-value 0.833	0.924 [0.734-1.163] p-value 0.501	1.029 [0.732-1.447] p-value 0.870
Treatment class[1]			
• IL-12/23	0.819 [0.419-1.600] p-value 0.558	0.648 [0.285-1.474] p-value 0.301	1.464 [0.441-4.868] p-value 0.534
• IL-17	0.741 [0.101-5.412] p-value 0.768	0.889 [0.121-6.537] p-value 0.908	NA
• IL-23	NA	NA	NA

Abbreviations: AE, Adverse Events; HR, Hazard ratio; CI, confidence interval; PASI, Psoriasis Area and Severity Index; CCI, Charlson Comorbidity Index; IL, Interleukin.
A p-value of <0.05 was considered significant. In bold statistically significant HRs.
NA: not applicable, cannot be computed due to the low numbers in this age group.
[1] Reference category: TNF-α inhibitors.

Supplement LOCF

In patients who discontinued treatment due to ineffectiveness and/or adverse events, PASI-scores at discontinuation were carried forward using the last observation carried forward method (LOCF). With this method, PASI-scores in the case of early-determination are carried forward, which ensures a more conservative approach.

Using LOCF data, linear regression analyses showed no difference in PASI-outcomes on month 6, 12, 18, and 24.

Absolute and relative PASI outcomes were more conservative after applying the LOCF-method compared to the raw data. After one year of treatment, the median [range] PASI in older patients was 4.5 [12.0] versus 3.6 [35.4] in younger patients. The proportion of patients ≥65 who reached a PASI-score <1 after one year of treatment was 12.3% vs. 18.9% in patients <65. A PASI-score <5 after one year of treatment was reached in 65.5% of patients ≥65 vs. 64.9% in patients <65.