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Patient characteristics and treatment patterns in patients with advanced psoriasis in specialty care settings in Finland

HSD98

Leena Koulu,[1] Lauren Passero,[2] Yichen Zhong,[2] Sirpa Alanen,[3] Kristiina Uusi-Rauva,[4] Samuli Tuominen,[4] Tatu Sainio[3]

[1]Turku University Hospital, Turku, Finland; [2]Bristol Myers Squibb, Princeton, NJ, USA; [3]Bristol Myers Squibb, Helsinki, Finland; [4]Medaffcon, Espoo, Finland

Introduction

- Psoriasis is a chronic, immune-mediated inflammatory disease affecting 2%-3% of the global population[1,2]
- In the Finnish public health care system, mild psoriasis is typically treated in the primary care setting with topical treatments or phototherapy, while severe cases often require the use of systemic treatments and are managed in hospital outpatient settings[1,2]
- Limited number of studies have characterized patients with psoriasis and treatment patterns in Finland to understand the full burden of managing moderate to severe psoriasis

Objective

- To characterize patient demographics and clinical characteristics by time of psoriasis diagnosis (2008-2012; 2013-2021) and treatment use (2013-2021) at 2 major Finnish hospital districts

Methods

- This retrospective, non-interventional, multiple registry study is based on the secondary use of data available from the data lakes of the Hospital District of Helsinki and Uusimaa (HUS), Hospital District of Southwest Finland (HDSF), and relevant nationwide registries in Finland
  - Services, demographics and patient characteristics, and drug purchase data were collected
- Patients who met eligibility criteria were assessed in 2 study cohorts, based on patient index date
  - Index date was defined as the earliest date of recorded International Classification of Diseases, Tenth Revision (ICD-10) diagnosis code, International Classification of Primary Care, Second Edition (ICPC2) code, or reimbursement for psoriasis treatment
    - Cohort A diagnosis from 2008 to 2012
    - Cohort B diagnosis from 2013 to 2021
  - Cohorts were divided into subgroups stratified by use of systemic or biologic treatments for psoriasis

Key inclusion criteria

- Patients with a main diagnosis of psoriasis (ICD-10 L40.X) between 2008 and 2021
- Patients who were treated in the secondary/tertiary (specialized) health care centers of the HUS or HDSF, and whose data were accessible via the data lakes of each hospital district

Key exclusion criterion

- Patients who were not residents of the HUS or HDSF when initially diagnosed with psoriasis

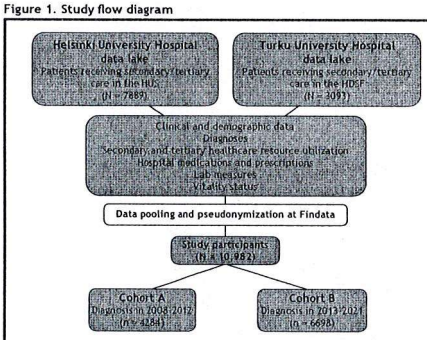
Statistical analysis

- Descriptive characteristics and uptake of systemic therapies were summarized
  - Means, standard deviations (SDs), medians, and interquartile ranges (IQRs) were reported for continuous variables
  - The numbers and percentages of patients were reported for each class of categorical variables
- Treatment patterns and treatment persistence (also known as drug survival) were assessed using Kaplan-Meier analyses
  - Sankey plots were utilized to visualize treatment patterns and transitions by patient subgroups

Results

- Between 2008 and 2021, 10,982 patients in a public specialty care setting in Finland were diagnosed with psoriasis (**Figure 1**)
  - Cohort A consisted of 4284 patients
  - Cohort B consisted of 6698 patients
- **Table 1** reports demographics and clinical characteristics for patients in both cohorts

Figure 1. Study flow diagram



Findata, Finnish Social and Health Data Permit Authority; HDSF, Hospital District of Southwest Finland; HUS, Hospital District of Helsinki and Uusimaa.

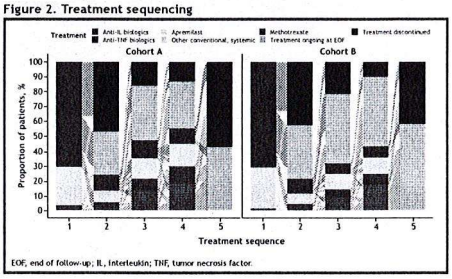
Table 1. Demographics and clinical characteristics at index date

Parameter	Cohort A (n = 4284)	Cohort B (n = 6698)
Age, n (%), years		
18-34	717 (16.7)	1277 (19.1)
35-54	1483 (34.6)	2467 (36.8)
55-64	1065 (24.9)	1447 (21.6)
≥65	1019 (23.8)	1507 (22.5)
Mean (SD)	52.8 (16.1)	51.3 (16.1)
Female, n (%)	2144 (50.0)	3237 (48.3)
PPP, n (%)	207 (4.8)	279 (4.2)
PsA, n (%)	1324 (30.9)	1915 (28.6)
IBD, n (%)	212 (4.9)	254 (3.8)
Index year, n (%)		
2013-2014	4284 (100.0)	1689 (25.2)
2015-2016	0 (0.0)	1441 (21.5)
2017-2018	0 (0.0)	1476 (22.0)
2019-2020	0 (0.0)	1528 (22.8)
2021	0 (0.0)	564 (8.4)
Hospital district, n (%)		
HDSF	1112 (26.0)	1981 (29.6)
HUS	3172 (74.0)	4717 (70.4)
Length of follow-up, years		
Mean (SD)	9.2 (2.1)	5.5 (2.6)

HDSF, Hospital District of Southwest Finland; HUS, Hospital District of Helsinki and Uusimaa; IBD, inflammatory bowel disease; PPP, palmoplantar pustulosis; PsA, psoriatic arthritis; SD, standard deviation.

- Per reimbursement guidelines, patients primarily received conventional systemic treatment (methotrexate or acitretin) before initiating biologic therapy or apremilast (**Figure 2**)
  - In Cohort A, median drug survival for the first systemic treatment was 33 months (interquartile range [IQR] 7-82) vs 51 months (IQR 20-100) for the first anti-interleukin (IL) biologic therapy
  - In Cohort B, median drug survival for the first systemic treatment was 19 months (IQR 5-41) vs 35 months (IQR 12-46) for the first anti-IL biologic therapy and 29 months (IQR 18-41) for the first antitumor necrosis factor (TNF) biologic

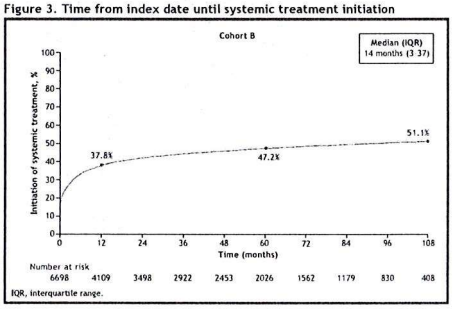
Figure 2. Treatment sequencing



EOF, end of follow-up; IL, interleukin; TNF, tumor necrosis factor.

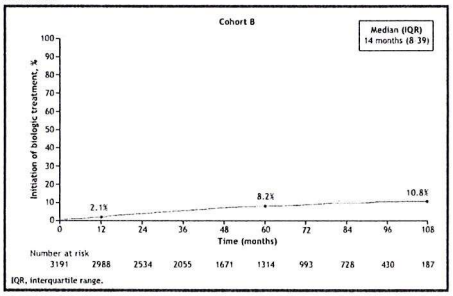
- Within approximately 7.7 years of their PsO diagnosis in the specialty care setting, 50% of patients had initiated systemic treatment
  - In Cohort B, nearly half of patients with psoriasis (47.2%) initiated systemic treatment within 5 years of index date (**Figure 3**)
  - In the specialty care setting, 8.2% of patients in Cohort B initiated biologic treatment within 5 years of systemic treatment initiation (**Figure 4**)

Figure 3. Time from index date until systemic treatment initiation



IQR, interquartile range.

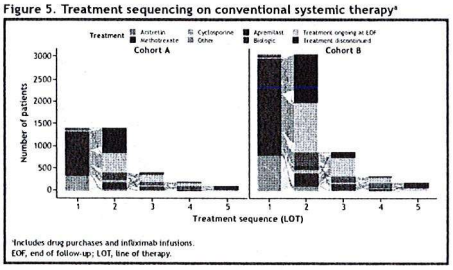
Figure 4. Time from systemic treatment initiation until biologic treatment initiation



IQR, interquartile range.

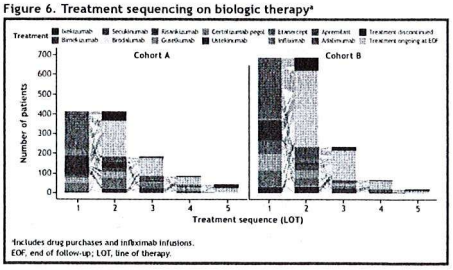
- Among patients on conventional therapy, most received either methotrexate or acitretin as first line of therapy (LOT) (**Figure 5**)
  - Cohort A: 70.3% methotrexate; 24.1% acitretin
  - Cohort B: 70.8% methotrexate; 26.1% acitretin
- Patients who initiated methotrexate as their first LOT had longer median drug survival duration than those who initiated acitretin
  - Cohort A: 3.0 vs 0.9 years
  - Cohort B: 1.6 vs 0.6 years
- Upon switching to biologic therapy, patients in Cohort A most often received adalimumab (21.4%), ustekinumab (23.8%), or apremilast (25.2%) as the first biologic LOT (**Figure 6**)
  - First biologic LOT in patients in Cohort B most often included apremilast (38.4%), ustekinumab (14.6%), guselkumab (12.3%), or secukinumab (12.0%)

Figure 5. Treatment sequencing on conventional systemic therapy[a]



[a]Includes drug purchases and infliximab infusions.
EOF, end of follow-up; LOT, line of therapy.

Figure 6. Treatment sequencing on biologic therapy[a]



[a]Includes drug purchases and infliximab infusions.
EOF, end of follow-up; LOT, line of therapy.

- Of those who received nonbiologic systemic therapy at any point during the study (n = 4334), nearly half (n = 1994; 46.0%) discontinued treatment, 35.8% (n = 1552) were treated with methotrexate, and 9.0% (n = 390) were treated with biologic therapy
  - Approximately 21.0% of patients (n = 82) on biologic therapy received guselkumab
- At the end of follow-up (EOF; December 31, 2022), 1103 patients were lost to follow-up
- Among the patients who remained in the study (n = 9879), the majority (n = 5557 [56.3%]) were receiving no systemic treatment at EOF (**Table 2**)

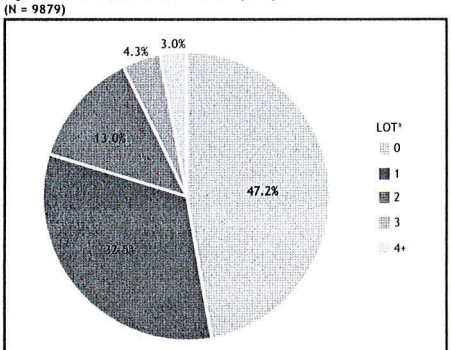
Table 2. Treatment status at EOF

Treatment type, n (%)	Study population at EOF (n = 9879)
No systemic treatment	5557 (56.3%)
Systemic nonbiologic treatment	3936 (39.8%)
Biologic treatment	386 (3.9%)

EOF, end of follow-up.

- When stratified by the number of treatments previously received (ie, LOTs), the majority of patients had either received no treatment (n = 4662; 47.2%) or were still on first-line therapy (n = 3215; 32.5%) (**Figure 7**)
  - Patients treated with systemic therapy primarily transitioned through up to 2 LOTs, while patients treated with biologics transitioned through ≥2 LOTs (**Table 3**)

Figure 7. Overall number of treatments (LOTs) from index date to EOF (N = 9879)



[a]LOT 0 denotes patients who had received no systemic therapies at EOF.
EOF, end of follow-up; LOT, line of therapy.

Table 3. Transitions through LOTs by treatment type

No. of LOTs	Systemic (n = 4334), n (%)	Biologic (n = 390), n (%)
1	2636 (60.8%)	7 (1.8%)
2	1094 (25.2%)	94 (24.1%)
3	364 (8.4%)	127 (32.6%)
≥4	240 (5.5%)	162 (41.5%)

LOT, line of therapy.

Discussion

- Consistent with prescribing guidelines, conventional systemic therapies are prescribed for most patients with advanced psoriasis in specialty care settings
- Patients with moderate to severe psoriasis typically receive conventional therapies as a second-line or later treatment and do not progress to treatment with a biologic therapy for several years
- This continuous cycle through the conventional treatment landscape can often lead to the undertreatment of psoriasis and to eventual treatment discontinuation

Strengths and Limitations

Strengths

- Data from 2 of the 5 major hospital districts in Finland, representing approximately 39% (n = 2.2 million) of the total Finnish population, were included in this study
  - This fairly extensive coverage of patients with severe psoriasis (with up to 9 years of follow-up) should make these results generalizable to the overall population of patients with severe psoriasis in Finland

Limitations

- This study was based on existing, specialized healthcare registry data; therefore, the available data were limited
- No patient-level medication data were available in this registry-based study; as a result, the determination of treatment persistence and adherence was based solely on purchases of reimbursable prescription medications

Conclusions

- Among patients with severe psoriasis in Finland, significant numbers of patients are treated with conventional systemic therapies, yet many discontinue treatment or spend several years on therapy before advancing to treatment with biologics
- There is a need for durable and effective therapies to fill an unmet need for severe psoriasis care following the use of conventional systemics

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Disclosures

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Email: samuli.tuominen@medaffcon.fi