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Treatment goals in psoriasis

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Summary
The introduction of biologics has not only broadened the therapeutic armamentarium for psoriasis but also stimulated discussion about the treatment of this common skin condition. The recently presented German S3 psoriasis guideline contains detailed information on the efficacy of the different products and describes important safety and practical aspects of psoriasis treatments. Patient surveys and recent studies in Germany indicate a relatively high mean severity of skin symptoms and low quality of life among affected patients. One possible explanation is that the conventional traditional and new treatment options are not being used consistently. In this paper, minimum treatment goals for psoriasis that should be achieved by an individually selected treatment regimen are presented. If, after a defined period of time, an at least 50 % reduction of the baseline Psoriasis Area and Severity Index (PASI) and a Dermatology Life Quality Index of $\leq$ 5 is not reached, patients should be switched to another therapy, after a balanced discussion. Whenever necessary, a continuous maintenance therapy should be instituted with special attention to these goals. Patients should carefully be monitored for the presence of psoriatic arthritis and comorbidities because these may need to be integrated in the planning of treatment goals on an interdisciplinary basis.

Introduction

With a prevalence of 2 to 3 % (about 1.5 to 2 million patients), psoriasis is one of the most frequent chronic inflammatory diseases in Germany, ranking ahead of rheumatoid arthritis (prevalence of about 1 %) and Crohn disease (prevalence of about 0.5 %). It is assumed that about 30 % of patients have at least moderate disease, often requiring systemic treatment in addition to topical treatment. About two-thirds of psoriasis patients have a chronic course with the need for continual control of disease activity. Up to now, methotrexate, acitretin, fumaric acid esters and cyclosporine have been available for systemic treatment; this will be referred to as conventional systemic treatment. Due to side effects and contraindications, they can not be administered to all patients or may not be sufficiently effective. Because of its limited efficacy, acitretin is not adequate as monotherapy of moderate to severe plaque-type psoriasis and can be recommended only in combination with phototherapy. Therefore, for long-term treatment only methotrexate or fumaric acid esters should be considered.

New insights into the pathophysiology of psoriasis and other chronic inflammatory diseases have led to the identification of new therapeutic strategies. Targeted blockade of surface molecules involved in activation or migration of inflammatory cells as well as proinflammatory mediators are the mechanisms of action of antibodies and fusion proteins produced by genetically modified cells. These molecules known as "biologics", have become available 2004 (Table 1). The biologics are approved for the treatment of moderate to severe psoriasis when conventional systemic therapy has not been effective or cannot be administered due to side effects or contraindications. The question arises as to how "moderate to severe psoriasis" or "therapeutic response" is defined and documented. As treatment with biologics usually demands pretreatment with conventional systemic therapies, their use is also part of the current discussion on disease and treatment concepts in psoriasis.

Table 1: Licensing status of systemic treatments of psoriasis and psoriatic arthritis in Germany (status September 2006).

	Psoriasis	Psoriatic arthritis
Methotrexate (e.g. Lantarel®, Metex®)	Most severe psoriasis resistant to therapy, especially plaque-type	Severe psoriatic arthritis in cases of inadequately effective treatment with basic treatment or NSAIDs or intolerance of these drugs or in cases of primarily aggressive course
Leflunomid (Arava®)	Not licensed	Antirheumatic basic treatment to treat active psoriatic arthritis in adults
Acitretin (Neotigason®)	Most severe psoriasis resistant to treatment, especially psoriatic erythroderma and pustular psoriasis	Not licensed
Fumaric acid esters (Fumaderm®)	Severe psoriasis	Not licensed
Cyclosporine (e.g. Immunosporin®, Cicloral Hexal®)	Most severe psoriasis resistant to treatment	Not licensed
Efalizumab (Raptiva®)	Moderate to severe plaque-type psoriasis in adults who did not respond to other systemic treatments including cyclosporine, methotrexate or PUVA, for whom such treatments are contraindicated or were not tolerated	Not licensed
Infliximab (Remicade®)	Moderate to severe plaque-type psoriasis in adults who did not respond to other systemic treatments including cyclosporine, methotrexate or PUVA, for whom such treatments are contraindicated or not tolerated	Indicated in combination with methotrexate. Also recommended in case of contraindications or intolerance towards methotrexate monotherapy in adult patients with active and progressive psoriatic arthritis who had no adequately responding to antirheumatic basic therapy.
Etanercept (Enbrel®)	Moderate to severe plaque-type psoriasis in adults after failure of, intolerance to or contraindication for other systemic treatments such as cyclosporine, methotrexate or PUVA	Active and progressive psoriatic arthritis (arthritis psoriatica) in adults following failure of basic therapy
Adalimumab (Humira®)	Not licensed	Treatment of active and progressive psoriatic arthritis in adults who inadequately responded to previous basic therapy

Further important aspects in this discussion are insights won by questionnaires and studies in recent years:

1) The mental and physical burdens of patients affected by psoriasis as well as the impact on professional and private life caused by the disease are greater than often presumed and are comparable to those caused by other severe diseases such as cardiac, inflammatory or malignant disease.
2) As in other chronic inflammatory diseases, psoriasis is linked with a particular pattern of associated diseases, especially heart and circulatory disease, hypertension, diabetes and disorders of lipid metabolism. It is expected that the mortality due to these associated disease can be lowered by early and consistent treatment of psoriasis.
3) Patients are poorly satisfied with therapeutic concepts employed to date, mainly due to inadequate effectiveness, and expect long-term control of the disease. First studies on health care of psoriasis patients in Germany show high average disease activity and relatively little use of systemic treatment.
4) A special problem seems to be the situation for a subgroup of patients with high disease activity. This group displays a particularly high impact on the quality of life, long absence

from work and relatively frequent inpatient care. For these patients, in particular, the question of adequate utilization of systemic therapy options including biologics is raised.

In addition to guidelines on efficacy, safety and practical aspects of individual products on an S1 level, a guideline on the S3 level with a total overview of psoriasis treatment has been published [1]. All published clinical studies on efficacy of the products or procedures published before May 2005, as far as they meet certain quality criteria, included. The analysis of published data was the basis for determining evidence levels and grades of recommendation for practical use.

In this paper, treatment goals in psoriasis are discussed. This might, together with existing guidelines, contribute to using available treatment options for psoriasis in a more consistent way. The goal of these measures is improving care of affected patients.

Satisfaction with treatment and disease burden

Questionnaires sent to members of psoriasis patient organizations in Europe and the United States show a negative picture with regards to satisfaction with treatment. Only 27 % of about 18,000 responding European patients were very satisfied [2]. The main reason for dissatisfaction was the amount of time spent on treatment (49 %) and the poor efficiency of them (32 %). Almost 90 % of patients in a US survey reported fear of worsening of psoriasis [3].

This poor rate of satisfaction also has effects on the patients' choice of physician. One-third of European patients reported consulting three or more physicians in the last two years about psoriasis; 21 % no longer consulted any physician.

In a survey of psoriasis patients in Germany as to desired benefits of treatment, three of the six most frequently stated were related to improvement of skin signs and symptoms [4].

Existing studies on various aspects of the disease burden of psoriasis including psychosocial impairments, reduction of quality of life, willingness to bear costs for improving the disease ("willingness to pay") as well as actual financial costs together demonstrate the high disease burden caused by psoriasis (Table 2).

Many patients have feelings of stigmatization and bodily unattractiveness as well as a high rate of depressive disorders including ideations of suicide. With the help of generic instruments to measure quality of life, such as the quality of life questionnaire SF-36, it has been shown that psoriasis is viewed by those affected as being mentally and physically a similar burden as angina pectoris or cancer [10]. Various surveys done on German psoriasis patients using "Dermatology Life Quality Index" (DLQI) revealed average values about 10 [7–9, 14], with values over 10 denoting a severe impairment of quality of life due to the disease [15].

The economic costs of psoriasis are substantial. A cost-of-illness study done before the introduction of biologics in Germany suggested a total economic cost due to moderate to severe psoriasis of over 1 billion € annually [13]. In this study, total cost for patients unsuccessfully treated with conventional systemic therapy was higher with 8,831 €/year. These patients have the highest disease activity of all patients examined with moderate to severe psoriasis (mean Psoriasis Area and Severity Index (PASI) of 22.2).

Associated diseases

The concept of the disease psoriasis is changing. Beyond the wishes of the patient for effective and safe treatment, other medical grounds underscore the need for adequately effective long-term control of psoriasis.

Psoriasis is no longer viewed as just being a skin disease; it is considered an inflammatory systemic disease, just as rheumatoid arthritis, with an increased rate of associated diseases [16]. Associated diseases directly dependent on severity and duration of psoriasis include alcohol abuse, depression/suicidal tendencies and metabolic syndrome (obesity, dyslipidemia, arterial hypertension, insulin resistance/type II diabetes mellitus) [17–20]. These associated diseases result in a higher mortality rate in comparison with healthy individuals, especially due to cardiovascular complications. In the case of rheumatoid arthritis, evidence exists that antiinflammatory therapy with TNF-antagonists reduces the risk of cardiovascular events [21].

In addition to the above-mentioned associated diseases, about 20 % of psoriasis patients develop psoriatic arthritis (PsA), usually years after first onset of skin signs and symptoms. Morbidity of PsA is greater than previously assumed. In about every fifth patient, progressive joint destruction similar to rheumatoid arthritis occurs, with a severe course in every tenth patient [22]. In 40 % of patients with PsA more than 5 joints are affected in the course of the disease. In patients with skin and joint involvement, interdisciplinary treatment strategies may be needed. As far as joint symptoms are concerned, separate treatment goals must be defined.

Status of care

According to the reimbursement statistics of the statutory health care system about 1 million psoriasis patients consult physicians per quarter year in Germany (data from 1st quarter 2000); of these about half visit primary care physicians and half, dermatologists. The few existing studies suggest a lack of care, especially for patients with high-grade disease activity. In a study, up to now only published as an abstract, of 1,511 patients cared for in dermatology offices and outpatient clinical departments with an average PASI of 12.0; only one-third had received prior systemic treatment [23]. Even in the almost 20 % of patients with severe skin involvement (PASI $\geq$20), only one-half had received systemic treatment. Another survey on 1,203 patients treated as inpatients in dermatology departments or rehabilitation clinics found an average PASI of 26.0 [24].

These results suggest that psoriasis, when considering severity of signs and symptoms and the burden perceived by patients, is underestimated and inadequately treated. It is doubtful that conventional and new treatment options are being utilized consistently in Germany. It also appears that treatment strategies are not altered for patients who continue to have high disease activity while being treated. This situation may explain why biologics are administered less frequently in Germany than in other countries. In studies on the treatment of patients with rheumatoid arthritis after biologics started to be reimbursed in various European countries and in the USA, it was shown that in the USA, Sweden and Norway after one year about 20 patients per 100,000 population were being treated with these new drugs.

In Germany, almost in last place among 20 countries examined, this rate was

Table 2: Psoriasis – selected aspects* of impact and satisfaction with treatment.

I. Psychosocial aspects	
Impact on job [5]	
• Increased absence from work	39 %
• Loss of employment	21 %
• Difficulties in finding a new employment	20 %
• Preventing promotion	16 %
Stigmatization [3]	
• Feeling of shame	81 %
• Feeling of being unattractive	75 %
Depression [3]	
• Depressive mood	54 %
Wish for death [6]	
• Wish for death	10 %
• Ideations of suicide	6 %
II. Reduction of quality of life	
DLQI	
• On average about 10 [7–9]	
(0: none, 30: maximal reduction; over 10: very strong reduction)	
SF-36 in comparison [10]	
(the lower the score, the higher the reduction)	mental / physical impact
• Healthy adults	53 / 55
• Type II diabetes mellitus	52 / 42
• Decompensated cardiac insufficiency	50 / 35
• Cancer	49 / 45
• *Psoriasis*	46 / 41
• Chronic pulmonary disease	45 / 42
• Depression	35 / 45
III. Satisfaction with treatment [2, 3]	
• Frustrated, ineffective treatment	90 %
• Fear of worsening	88 %
• Poorly to moderately satisfied	73 %
• Too time-consuming	49 %
• Not effective enough	32 %
• 3 or more physicians in last 2 years	32 %
• No physician care	21 %
IV. Willingness to pay [11, 12]	
• In percent of gross income	about 10 %
V. Financial impact of moderate to severe psoriasis [13]	
(before availability of biologics)	
• Average total cost/year	6,709 €
• Average cost to patient/year/patient	794 €

* The stated figures should serve as an indication of the degree of possible impact. They vary according to the subpopulation under investigation. For details see references.

reached only after six years [Personal Note of G. Kobelt, 2006]. Even though several studies on biologics in the treatment of psoriasis show a similar efficacy in this group as in patients with no prior treatment [25, 26].

Treatment goals

Treatment decisions in patients with psoriasis are made on an individual basis, with various aspects on the side of the patient (e.g. severity of skin signs and symptoms, disease burden, age, gender, associated diseases and their treatment, response to and/or intolerability of past treatment) and the profile of available products must be considered [27].

The S3 guideline serves as a good aid in decision-making, as relevant aspects of

the products (licensing information, efficacy, safety, practicability, costs) are presented in detail and further, assessments are made as to the quality (evidence level, evidence grade) of statements on efficacy and the resulting strength of treatment recommendations. On the backdrop of individual treatment decisions, the guideline can only provide a general treatment algorithm. A sensible and, in view of the current status of care, necessary supplement would be individual treatment goals that – together with the guidelines – would promote a consistent utilization of available treatment repertoires.

Treatment benefit for the patient

In assessing the benefit of treatment, the benefit for the patient takes on an increasing role. In a survey of patients with psoriasis as to the desired treatment benefit, the following criteria were named most often [4]:

- healing of all skin lesions,
- reduction of pruritus and burning on the skin,
- less loss of time devoted to treatment,
- healing of all exposed lesions,
- avoidance of strong side effects of treatment,
- fewer visits to physician or clinic.

The choice of treatment and the formulation of treatment goals should take individual demands of patients as to efficacy, practicability and safety of treatment into account.

Practical approach

There is no uniform definition of mild, moderate or severe psoriasis at present. It is common to classify into "mild", "moderate" or "severe" psoriasis. Table 3 gives an overview of parameters often used to grade the severity of skin signs and symptoms and the effects of therapy in studies. In addition to PASI and Body Surface Area" (BSA) a variety of other aspects must be considered in grading the severity of disease. These include special symptoms such as involvement of exposed areas, the anogenital region, and nails, pruritus, response to past treatment measures and possible associated diseases. To assess the individual reduction of quality of life, the DLQI has been established (Table 4). It is used in evaluating the severity of disease as well as efficacy of treatment. For all biologics licensed to treat psoriasis in Germany, data not only exist for their effects on skin symptoms, but also on DLQI. To grade the severity of psoriasis a so-called "rule of tens" has been put forth [28], where a PASI > 10 or BSA > 10 and a DLQI > 10 indicate severe psoriasis. Considering the importance of treatment benefit to the patient, it has been suggested that DLQI should be given more weight than PASI. Grading the severity of psoriasis is, in the end, a global evaluation made by the treating dermatologist and taking into account objective skin signs and symptoms, the individual disease history and the subjective well-being of the patient. Important parameters for evaluating disease severity should be documented before treatment and the effects of treatment should be monitored by regularly checking these parameters (Table 5).

Treatment goals in psoriasis therapy

In judging the efficacy of treatment especially in the course of clinical trials, the emphasis has mainly been on

Table 3: Examples of parameters used to evaluate the severity of skin signs and symptoms in psoriasis.

Localised (mild) psoriasis
• *Target lesion (Sum of Scores, SOS)* Evaluation of signs and symptoms erythema, induration and scaling of one marker plaque (respectively: 0 = none, 1 = mild, 2 = moderate, 3 = severe, 4 = very severe) Range 0 to 12
Moderate to severe psoriasis
• *Body Surface Area (BSA) (static)* Body surface affected by symptoms of psoriasis in percent Usual classification: > 10 % at least moderate skin involvement
• *Psoriasis Area and Severity Index (PASI) (static)* Range 0 to 72 Usual classification: > 10 at least moderate skin involvement
• PASI 75 (dynamic) Reduction of baseline PASI by at least 75 %
• *Physician's Global Assessment (PGA) (static)* Evaluation of signs and symptoms considering erythema, infiltration and scaling on average over all lesions; 0 = no symptoms (with exception of residual discoloration), 1 = minimal, 2 = mild, 3 = moderate, 4 = strong, 5 = severe

Table 4: The "Dermatology Life Quality Index" (DLQI) to evaluate the impact on quality of life by a skin disease (e.g. psoriasis).

DLQI	
10 Questions in the fields	
• Symptoms and feelings • Daily activities • Recreation time • Work and school • Personal relationships • Impact due to treatment Each question is rated from 0 (no impact) to 3 (maximum impact)	
Evaluation (range: 0 to 30) [15]	
• 0 to 1	No impact
• 2 to 5	Mild impact
• 6 to 10	Moderate impact
• 11 to 20	Very strong impact
• 21 to 30	Extremely strong impact

changes of parameters of skin severity (PASI, BSA, PGA). In recent clinical studies on systemic treatment of moderate to severe psoriasis it has become common to state the values for PASI 50, PASI 75 or PASI 90, i.e. the percentage of patients who under treatment achieve a reduction of the PASI score of 50 %, 75 % or 90 % in comparison to baseline. In older studies, statements were made which allow for a comparable evaluation. Due to its broad use and its central role in comparing the efficacy of different therapeutic approaches (see S3 guideline), PASI is a suitable parameter for formulating treatment goals. With the help of appropriate forms, "PASI calculators" or suitable computer programs, it can be employed in day-to-day practice.

To evaluate clinical response in topical treatment of mild psoriasis, PASI is less suitable, as changes to this index would be inadequately reflected when only mild skin signs or symptoms are present. Here, judgment of the improvement of skin signs and symptoms using the Physician's Global Assessment (PGA) or evaluation of a selected "target lesion" using an evaluation based on PASI (SOS, see Table 3) are appropriate.

Clinical studies show that judgment of response to each product should be done at different intervals after initiation of treatment. For the standard dosages given in the S3 guideline, these intervals, usually those for determining the primary goal in clinical studies, are listed in Table 6. In combination therapy with a systemic drug and topical treatment of moderate to severe psoriasis, the time interval for the systemic drug applies. Through combination therapy, a defined treatment goal may be achieved, even if this is not possible by systemic treatment alone.

The individual disease burden should play on the patient should play a central role in formulating treatment goals. This takes into account that continual treatment of psoriasis, treatment of a satisfied patient can hardly be changed. A suitable and validated instrument to measure satisfaction with treatment does not yet exist. Due to its simplicity and widespread distribution, DLQI seems an appropriate indicator of disease burden/quality of life. Especially as a great advantage it allows for simultaneous determination of the burden on the patient and thus indirectly reflects the aspect of practicability. New treatment studies, that monitor effects on PASI as well as on DLQI show a correlation between both parameters. There is at least a gross correspondence between the portion of patients achieving PASI 75 and that of patients exhibiting a DLQI < 5 (mild burden) or who show an improvement of DLQI of at least 5 points [29–31]. A DLQI of 0 or 1 (no burden) corresponds more with a PASI 90 response or an absolute PASI value of under 5 [31].

Table 5: Recommendation of relevant parameters for the assessment of disease severity.

Severity of skin signs and symptoms
• SOS, BSA, PASI, PGA (see Table 3)
Impact on Quality of life
• DLQI (see Table 4)
Other parameters
• Special manifestations: psoriatic nail disease, pustular psoriasis, PsA
• Special symptoms: Involvement of exposed areas, genitals, pruritus, bleeding
• Response to previous treatment measures
• Prior hospitalization, rehabilitation due to psoriasis
• Absence from work due to psoriasis
• Associated diseases

Table 6: Recommendation for time intervals after which the efficacy of treatment should be judged (standard dosages according to S3 guideline).

Product	**Time interval**
Topical	
• Steroids of class II to IV (German classification according to Niedner)	2–4 weeks
• Combination betamethasone/calcipotriol	2–4 weeks
• Vitamin D3 analogues	4–6 weeks
Phototherapy	
• UVB 311 nm (5 x/week)	6–8 weeks
• PUVA (4 x/week)	6–8 weeks
Systemic	
• Infliximab	10 weeks
• Cyclosporine	10–12 weeks
• Efalizumab	12 weeks
• Etanercept	12 weeks
• Methotrexate	12–16 weeks
• Acitretin monotherapy	12–16 weeks
• Fumaric acid esters	12–16 weeks

Short-term and long-term treatment

A goal of PASI 75 or even PASI 90 and a DLQI of 0 or 1 should be strived for, but is not at present practicable as minimum treatment goal, i.e. that not achieving it forces a change in treatment. The in part highly variable rate of patients achieving a PASI 75- or PASI 90- response with the licensed products should be one consideration among others, such as safety and costs, in deciding on treatment. The evaluation of efficacy in the S3 guideline is based on a PASI 75 response.

We propose as a minimum treatment goal for moderate to sever psoriasis a DLQI < 5 (at most "mild burden"), which, according to existing data, requires a PASI 75 response in most cases. Even in cases with less reduction of

Table 7: Recommendation for minimum treatment goals in treating moderate to severe psoriasis (monotherapy or combination treatment). For more details see text.

I. At the end of induction treatment (see Table 6)
- PASI 50 *and* DLQI < 5

II. Long-term symptom control (monitored every 4 to 8 weeks)
- PASI 50 *and* DLQI < 5

III. Further treatment goals, if applicable:
- Improvement of psoriatic nail disease
- Consideration of associated diseases (perhaps interdisciplinary diagnostics and treatment)
- Consideration of psoriatic arthritis (perhaps interdisciplinary diagnostics and establishing treatment goals, e.g. ACR 50, prevention of progression and bone changes)

skin signs and symptoms and the presence of (only) a mild burden due to psoriasis, we only recommend changing treatment when less than a 50 % improvement of skin signs or symptoms occur. From this follows that the treatment goal would be a DLQI < 5 *and* (at least) a PASI 50 response (Table 7). This treatment goal should be reached with the chosen treatment at the end of an induction phase, usually after 12 weeks (Table 6). If this goal is not achieved, a change of treatment is recommended at that time.

The majority of patients for whom systemic treatment is indicated will require long-term treatment. With high disease activity, continual treatment is favored, and treatment with one product is favored over rotation therapy. Change of treatment should only occur if an adequate response with one product or a prudent combination treatment is no longer achieved or treatment must be discontinued due to safety or tolerability. For long-term treatment we recommend the same treatment goals as for induction treatment, with the intervals of control visits having to be adjusted (usually every 4 to 8 weeks, see relevant S1 and S3 guidelines). In patients with psoriatic nail disease, an effect on this manifestation is desirable, and systemic treatment should be supplemented by topical measures (e.g. corticosteroids or vitamin D analogues in the form of solutions). In patients with skin *and* joint involvement, special treatment goals must be established 20, 50, 70 criterias which take treatment goals for skin and for joints into consideration (e.g. American College of Rheumatology [ACR]) and include specials parameters to assess disease burden in patients with arthritis (e.g. PsAQoL) [32]. Products should be preferred with effects on skin and/or joint symptoms corresponding to the individual manifestations of the patients. Setting treatment goals and choice of suitable treatment may have to be made on an interdisciplinary basis together with the rheumatologist.

Every treatment should be done under consideration of maximum safety and tolerability for the patient. In the individual case, a risk-benefit analysis on the basis of the severity of psoriasis and the individual risk profile for induction and maintenance treatment should be undertaken. Especially long-term treatment has high demands on safety. Here, absolute and relative contraindications, the monitoring test recommended for the product during treatment and criteria for a discontinuation of treatment should be observed. The S3 guideline provides a good overview [1]. In individual cases, safety aspects may outweigh efficacy in the choice of starting or continuing a particular product. In the event that treatment alternatives are not available, it may be necessary to deviate from treatment goals. In principle, treatment goals must be discussed with the patient and adapted to his individual conceptions.

Special aspects of topical treatment of psoriasis

No studies have been done to evaluate quality of life during topical treatment. It remains to be seen if DLQI is suitable to assess quality of life during topical treatment of psoriasis. In contrast to long-term treatment recommended for chronic moderate to severe psoriasis, topical treatment of mild psoriasis can be performed on an intermittent basis. The efficacy of long-term topical treatment, only applied when the patient sees the necessity ("as needed"), has been shown for the fixed combination of calcipotriol/betamethasone [33]. Interestingly, even some patients with moderate to severe psoriasis (PASI > 12) responded well to the combination, so that sole topical treatment cannot principally be excluded in severe psoriasis

Conclusions

The recommendations made here for minimum treatment goals in the treatment of moderate to severe psoriasis is intended to stimulate a discussion on how care of patients with psoriasis in Germany can further be improved. Defining therapy goals and applying the current S3 Guideline can contribute a consistent use of available treatment options. This includes

1) the greater use of systemic treatments when topical treatment and/or phototherapy do not provide adequate results,
2) timely change in treatment while observing the optimal risk-benefit ratio and
3) use of biologics when conventional therapeutics are inappropriate or incapable of reaching treatment goals.

New data suggest that particularly severely affected patients or patients inadequately controlled by conventional treatment are not satisfactorily being cared for in Germany. In order to further clarify the benefit of old and new products in the long-term treatment of psoriasis, a treatment registry similar to that for rheumatoid arthritis is desirable <<<

Conflicts of interest

No conflicts of interest in direct connection with the manuscript.

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References

1 Nast A, Kopp IB, Augustin M, Banditt KB, Boehncke WH, Follmann M, Friedrich M, Huber M, Kahl C, Klaus

J, Koza J, Kreiselmaier I, Mohr J, Mrowietz U, Ockenfels HM, Orzechowski HD, Prinz J, Reich K, Rosenbach T, Rosumeck S, Schlaeger M, Schmid-Ott G, Sebastian M, Streit V, Weberschock T, Rzany B. S3-Leitlinie zur Therapie der Psoriasis vulgaris. J Dtsch Dermatol Ges. 2006 Nov; 4(s2): S1–S126.
2 Dubertret L, Mrowietz U, Ranki A, van de Kerkhof PC, Chimenti S, Lotti T, Schafer G. European patient perspectives on the impact of psoriasis: the EUROPSO patient membership survey. Br J Dermatol. 2006 Oct; 155(4): 729–736.
3 Krueger G, Koo J, Lebwohl M, Menter A, Stern RS, Rolstad T. The impact of psoriasis on quality of life: results of a 1998 National Psoriasis Foundation patient-membership survey. Arch Dermatol. 2001 Mar; 137(3): 280–284.
4 Zschocke I, Hammelmann U, Augustin M. Therapeutic benefits in dermatological therapy. Evaluation of therapy from the physician's und patient's perspective in psoriasis and atopic dermatitis. Hautarzt 2005 Sep;56(9): 839–842.
5 Fleischer AB Jr, Feldman SR, Rapp SR. The magnitude of skin disease in the United States. Dermatol Clin. 2000 Apr; 18(2): xv–xxi.
6 Gupta MA, Schork NJ, Gupta AK, Kirkby S, Ellis CN. Suicidal ideation in psoriasis. Int J Dermatol. 1993 Mar; 32(3): 188–190.
7 Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI) – a simple practical measure for routine clinical use. Clin Exp Dermatol. 1994 May;19(3): 210–216.
8 Finlay AY, Coles EC. The effect of severe psoriasis on the quality of life of 369 patients. Br J Dermatol. 1995 Feb; 132(2): 236–244.
9 Augustin M, Zschocke I, Seidenglanz K, Lange S, Schiffler A, Amon U. Validation and clinical results of the FLQA-d, a quality of life questionnaire for patients with chronic skin diseases. Dermatol Psychosom. 2000; 1: 12–17.
10 Manner K. Methodenentwicklung und klinische Anwendung von Willingness-to-pay und Conjoint-Analyse als Parameter der Präferenzenbildung bei Psoriasis vulgaris. Unveröffentlichte medizinische Dissertation. Freiburg 2005.
11 Rapp SR, Feldman SR, Exum ML, Fleischer AB Jr, Reboussin DM. Psoriasis causes as much disability as other major medical diseases. J Am Acad Dermatol. 1999 Sep; 41(3 Pt 1): 401–407.
12 Schiffner R, Schiffner-Rohe J, Gerstenhauer M, Hofstadter F, Landthaler M, Stolz W. Willingness to pay and time trade-off: sensitive to changes of quality of life in psoriasis patients? Br J Dermatol. 2003 Jun; 148(6): 1153–1160.
13 Sohn S, Schoeffski O, Prinz J, Reich K, Schubert E, Waldorf K, Augustin M. Cost of moderate to severe plaque psoriasis in Germany: a multicenter cost-of-illness study. Dermatology 2006; 212(2): 137–144
14 Augustin M, Zschocke I, Lange S, Seidenglanz K, Amon U. Quality of life in skin diseases: methodological and practical comparison of different quality of life questionnaires in psoriasis and atopic dermatitis. Hautarzt. 1999 Oct; 50(10): 715–722.
15 Hongbo Y, Thomas CL, Harrison MA, Salek MS, Finlay AY. Translating the science of quality of life into practice: What do dermatology life quality index scores mean? J Invest Dermatol. 2005 Oct; 125(4): 659–664.
16 Crown WH, Bresnahan BW, Orsini LS, Kennedy S, Leonardi C. The burden of illness associated with psoriasis: cost of treatment with systemic therapy and phototherapy in the US. Curr Med Res Opin. 2004 Dec; 20(12): 1929–1936.
17 Mallbris L, Akre O, Granath F, Yin L, Lindelof B, Ekbom A, Stahle-Backdahl M. Increased risk for cardiovascular mortality in psoriasis inpatients but not in outpatients. Eur J Epidemiol. 2004; 19(3): 225–230.
18 Sommer DM, Jenisch S, Suchan M, Christophers E, Weichenthal M. Increased prevalence of the metabolic syndrome in patients with moderate to severe psoriasis. Arch Dermatol Res. 2006 Dec; 298(7): 321–328.
19 Gupta MA, Gupta AK. Psoriasis and sex: a study of moderately to severely affected patients. Int J Dermatol. 1997 Apr; 36(4): 259–262.
20 Reynoso-von Drateln C, Martinez-Abundis E, Balcazar-Munoz BR, Bustos-Saldana R, Gonzalez-Ortiz M. Lipid profile, insulin secretion, and insulin sensitivity in psoriasis. J Am Acad Dermatol. 2003 Jun; 48(6): 882–885.
21 Jacobsson LT, Turesson C, Gulfe A, Kapetanovic MC, Petersson IF, Saxne T, Geborek P. Treatment with tumor necrosis factor blockers is associated with a lower incidence of first cardiovascular events in patients with rheumatoid arthritis. J Rheumatol. 2005 Jul; 32(7): 1213–1218.
22 Gladman DD, Antoni C, Mease P, Clegg DO, Nash P. Psoriatic arthritis: epidemiology, clinical features, course, and outcome. Ann Rheum Dis. 2005 Mar; 64 Suppl 2: ii14–7. Review.
23 Krueger K, Augustin M, Rauch C, Reich K. Prevalence and clinical manifestations of arthritis in a daily practice psoriasis population – a prospective observational study in Germany. Ann Rheum Dis, July 2006, Vol 65, Suppl II, 531, Abs SAT0265.
24 Mrowietz U, Elder JT, Barker J. The importance of disease associations and concomitant therapy for the long-term management of psoriasis patients. Arch Dermatol Res. 2006 Dec; 298(7): 309–319.
25 Reich K, Nestle FO, Papp K, Ortonne JP, Evans R, Guzzo C, Li S, Dooley LT, Griffiths CE; Infliximab induction and maintenance therapy for moderate-to-severe psoriasis: a phase III, multicentre, double-blind trial. Lancet. 2005 Oct 15–21; 366(9494): 1367–1374.
26 Dubertret L, Sterry W, Bos JD, Chimenti S, Shumack S, Larsen CG, Shear NH, Papp KA; CLEAR Multinational Study Group. Clinical experience acquired with the efalizumab (Raptiva) (CLEAR) trial in patients with moderate-to-severe plaque psoriasis: results from a phase III international randomized, placebo-controlled trial. Br J Dermatol. 2006 Jul; 155(1): 170–181.
27 Mössner R, Reich K. Infliximab in the treatment of psoriasis. Expert Rev Dermatol 2006; 1 (4): 515–526.
28 Finlay AY. Current severe psoriasis and the rule of tens. Br J Dermatol. 2005 May; 152(5): 861–867. Review.
29 Menter A, Gordon K, Carey W, Hamilton T, Glazer S, Caro I, Li N, Gulliver W. Efficacy and safety observed during 24 weeks of efalizumab therapy in patients with moderate to severe plaque psoriasis. Arch Dermatol. 2005 Jan; 141(1): 31–38.
30 Krueger GG, Langley RG, Finlay AY, Griffiths CE, Woolley JM, Lalla D, Jahreis A. Patient-reported outcomes of

psoriasis improvement with etanercept therapy: results of a randomized phase III trial. Br J Dermatol. 2005 Dec; 153(6): 1192–1199.

31 Reich K, Nestle FO, Papp K, Ortonne JP, Wu Y, Bala M, Evans R, Guzzo C, Li S, Dooley LT, Griffiths CE. Improvement in quality of life with infliximab induction and maintenance therapy in patients with moderate-to-severe psoriasis: a randomized controlled trial. Br J Dermatol. 2006 Jun; 154(6): 1161–1168.

32 McKenna SP, Doward LC, Whalley D, Tennant A, Emery P, Veale DJ. Development of the PsAQoL: a quality of life instrument specific to psoriatic arthritis. Ann Rheum Dis. 2004 Feb; 63(2): 162–169.

33 Kragballe K, Austad J, Barnes L, Bibby A, de la Brassinne M, Cambazard F, Fleming C, Heikkila H, Jolliffe D, Peyri J, Svensson A, Toole J, Wozel G. A 52-week randomized safety study of a calcipotriol /betamethasone dipropionate two-compound product (Dovobet/ Daivobet/Taclonex) in the treat-ment of psoriasis vulgaris. Br J Dermatol. 2006 Jun; 154(6): 1155–1160.