SHORT REPORT

Perception and Experience of Dupilumab in Atopic Dermatitis: A Real-Life Study

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Purpose: There are few data on the practical use of dupilumab by the patients and on the patients' experience with this treatment.

Objective: The objective of our study was to describe the experience and perception of dupilumab treatment in patients with atopic dermatitis (AD).

Patients and Methods: We conducted a multicenter retrospective observational study including adult patients with moderate to severe AD treated with dupilumab between January 2017 and December 2021. Clinical characteristics were collected and a questionnaire was sent to all patients. It consisted of different parts including the injection method and different numeric rating scales (NRS) evaluating the patient's satisfaction and the constraints related to the treatment.

Results: Eighty-two patients were included and the information was available for 77 patients who responded to the questionnaire. Injection of dupilumab was performed by a nurse in 47% (n=36) of patients and 43% (n=33) were autonomous. Injections were performed by a family member for 7 patients or by the general practitioner (1 patient). A wearing-off of the beneficial effect of dupilumab was reported by 47% of patients leading to shorten the dosing interval. In contrast, dose spacing was reported by 9 patients (11%). After a mean follow-up time of 29.7 ± 10.7 months (median: 27 months), drug survival was 72%. From the patients' perspective, the mean patient's satisfaction NRS score was 7.5 ± 1.8, and the constraints related to the treatment were scored at 3.1 ± 2.1 on NRS.

Conclusion: Although AD treatments may contribute to the burden of the disease, dupilumab was associated with a lower burden score, likely reflecting both treatment efficacy and easy of use and patient satisfaction.

Keywords: atopic dermatitis, dupilumab, real life, experience

Introduction

Real-world data on the long-term data of dupilumab are increasing and are reassuring in terms of both efficacy and safety.[1–4]

However, few data exist on the practical use of dupilumab by the patients and on the patient experience with this treatment.[5] The objective of our study was to describe the experience and perception of dupilumab treatment in patients with AD.

Patients and Methods
Study Design and Patients

We conducted a multicenter retrospective observational study in the 4 dermatology units of the Franche Comté, a well-defined administrative area located in eastern France. After informed consent (Comité de Protection des Personnes, CHU Besançon, 2022–015), all adult patients with moderate to severe AD treated with dupilumab between January 2017 and December 2021 were included.

Outcomes

Data were collected on computerized records and included: demographics, comorbidities, treatment history, side effects, associated treatments, and clinical severity scores: the scoring AD (SCORAD), the Dermatology Life Quality Index (DLQI), and the pruritus and sleep 11-points numeric rating scales (NRS). In addition, a questionnaire (Supplementary File) was sent to all patients. It consisted of different parts including the injection method, the management of adverse events, and different NRS evaluating the patient's satisfaction, the constraints related to the treatment, the quality of medical information, the patients' apprehension to dupilumab and the reasons for a possible discontinuation of the treatment.

Analysis

Statistical analysis was performed with Excel software (Microsoft Office, France). Continuous variables were expressed as mean ± standard deviation (SD) and categorical variables as number (percentage).

Results

Demographic Data

Eighty-two patients were included. The mean age was 39.4 ± 13 years with a M/F sex ratio of 1.5. AD had started in childhood in 83% of the patients. Atopic background was present in 70%. Prior to the introduction of dupilumab, 17% of patients were only treated with topical compounds and 83% of patients had previously received an average of 1.15 systemic treatments, including cyclosporine (48%), methotrexate (42%), phototherapy (34%), oral corticosteroids (18%), or another systemic treatment (7%, azathioprine or mycofenolate mofetil). The mean follow-up time was 29.2 months ± 10.7 (11–57).

Use of Dupilumab

The information was available for 77 patients who responded to the questionnaire. Injection of dupilumab was performed by a nurse in 47% of patients (n=36), 43% (n=33) of patients were autonomous. Injections were performed by a family member for 7 patients or by the general practitioner (1 patient).

Dupilumab was combined with topical steroids in 80% (n=63) of patients, most often occasionally (77%, n=48). After a mean duration of treatment of 13.5 months ± 1.7, a wearing-off of the beneficial effect of dupilumab or an end-of-dose effect was reported by 47% (n=36) of patients. In this situation, the dosing interval was shortened to 10 days by 3% of patients (n=2). In contrast, dose spacing was reported by 9 patients (11%) along with a maintained efficacy. The spacing pattern was one injection every 3 to 4 weeks (n=5) or no injections in the summer (n=4). The reasons for dose spacing were remission in summer, forgetfulness, good clinical response, or to reduce ocular adverse events (2 patients).

Tolerance

During treatment, 58% of patients (n=45) reported no problems while pain was experienced by 32% (n=25) of patients, 10% (n=8) reported an injection site reaction, 2.5% used an EMLA patch (n=2), and 11.6% (n=9) reported other effects such as post-injection inflammation (n=5). Seventy-six percent (n=60) of patients reported at least one systemic adverse event (AE). Altogether, 91 AE were reported by patients including ocular AE (n=54, 59%), increased fatigue (n=8), increased herpes recurrence (n=6), headaches (n=5), weight gain (n=5), tendency to rhinopharyngitis (n=5), allergy to dupilumab (n =2) but without allergologic confirmation, mucosal dryness (n=2). Twenty-seven percent (n=21) of the patients had contracted COVID-19 while on dupilumab, but no severe forms were reported.

Discontinuation of Dupilumab

After a mean follow-up time of 29.7 ± 10.7 months (median: 27 months), 23 patients (28%) had permanently discontinued dupilumab (72% drug survival). Seven patients (9%) had discontinued treatment for a mean of 10 ± 6 months before restarting dupilumab. The reasons for permanent discontinuation were loss of efficacy (26%, n=6), ineffectiveness and ocular adverse events (22%, n=5), ocular adverse events (17%, n=4), other causes (13%, n=3) including COVID 19 infection (n =1), rash, treatment constraints, ongoing cold sore, pregnancy (13%, n=3) and clear improvement (9%, n=2).

The therapeutic strategies at the end of the treatment were as follows: a new systemic treatment was introduced in 56% of patients (n=13). For 3 of them, it was a conventional treatment (ciclosporin, phototherapy), for 10 patients, it was a new generation treatment (baricitinib, nemolizumab, tralokinumab, upadacitinib). Ten patients were continuing with topical treatment (dermocorticoids or topical tacrolimus) as monotherapy. Four percent (n=3) of patients in this study were lost to follow-up.

Overall Patient Experience of Dupilumab

Five patients did not respond to the questionnaire. Thirty-five percent of patients had no apprehension before starting treatment and 53% of patients rated the quality of medical information prior to treatment initiation as greater than 8/10. From the patients' perspective, the mean patient's satisfaction score was 7.5 ± 1.8, and the constraints related to the treatment were scored at 3.1 ± 2.1.

Discussion

Several real-life studies have confirmed the efficacy and safety of dupilumab in AD.[2–4] However, few studies have looked at how patients use dupilumab in practice and their perception of the treatment.

In our series, the administration of dupilumab was mainly performed by a nurse and 43% of patients reported self-injection. It has been demonstrated that self-injection was associated with an increase in therapeutic compliance, notably due to greater flexibility in the time and place of administration.[6] In addition, improved adherence could be associated with better disease control, increased patient quality of life and economic benefits to the health care system.[7,8]

Although AD treatments may contribute to the burden of the disease, dupilumab was associated with a lower burden score,[9] likely reflecting treatment efficacy and easy of use and patient satisfaction.

Altogether, in our study, patients were satisfied with the dupilumab treatment as shown by the satisfaction NRS score of 7.5 and the low constraint NRS score (3.1).

Although the majority of patients (65%) expressed apprehension before starting the treatment, they assessed the drawbacks of side effects against the benefits, and the vast majority of patients believed that dupilumab was worth using. A recent study [5] underlined the importance of education and good patient–healthcare professionals communication which enable patients to manage their disease and treatment expectations.

Furthermore, the satisfaction of patients may explain the dupilumab persistence. In our study, after a mean follow-up time of 29.7 ± 10.7 months (median: 27 months), drug survival was 72%. A drug survival rate of 89% after 26.3 months of treatment with dupilumab in a cohort of 112 AD patients had previously been reported.[10] Similar high persistence was confirmed with overall drug survival rates in 402 patients of 91% and 88% after 1 and 2 years, respectively.[11] In a retrospective study that included 1963 patients with AD,[12] 77% of patients remained in treatment for 12 months. In an observational study including 288 AD patients treated with systemic therapy, the median duration of dupilumab treatment was 14.9 months.[13]

However, discontinuation of dupilumab treatment may occur. In a prospective multicenter registry including 402 AD patients, 9% discontinued dupilumab treatment mainly for AE[11] In a recent retrospective multicentric study,[14] 150 AD patients (15.5%) out of 968 patients discontinued treatment after a median treatment duration of 5 months. The main reasons for discontinuation were AE (41%), lack of efficacy (15%), lack of efficacy and AE (15%), planned pregnancy (8%), disease remission (4%) or various other reasons (17%). In contrast, in our study, the main reason for permanent discontinuation (28%) were loss of efficacy (26%) followed by ineffectiveness and ocular adverse events (22%), ocular adverse events (17%), other cause (13%), pregnancy (13%), and disease remission (9%). We did not observe any impact of the COVID-19 pandemic on the dupilumab treatment.

This difference could be explained by the appearance of new therapies in AD (baricitinib, upadacitinib and tralokinumab) that may favour the switch of treatments.

Although a longer dosing interval is feasible in some patients presenting AE, it is still not recommended that patients with a good clinical response should reduce the total number of injections and burden of treatment. In our study, dose spacing was rarely reported (11%) but in all cases with a maintained efficacy.

In a recent French multicentre retrospective study[15] including 1017 AD patients for whom a dupilumab dosing interval (> every two weeks) had been implemented, dose spacing was introduced for response, AE and for both AE and response in 55 (63%), 18 (20%) and 15 (17%) patients, respectively. The authors concluded that a longer dupilumab dosing interval in patients achieving a clinically relevant improvement is linked to maintained efficacy in 2 out of 3 patients. However, in the "LIBERTY AD SOLO-CONTINUE" study, high-responding patients taking dupilumab every 4 weeks maintained an EASI-75 response in only 58% of cases,[16] and continued response over time was most consistently maintained with dupilumab administered weekly or every 2 weeks. Longer dosage intervals resulted in a diminution of response. Conversely, we observed an end-of-dose effect in 47% of patients leading to the shortening of the dosing interval of dupilumab injection. To our knowledge the wearing-off of the beneficial effect of dupilumab has never been reported.

The limitations of our study are the retrospective nature and the small number of participants, the absence of a control group, the recall bias, and the declarative aspect of the responses.

We do not have a clear explanation for the male to female ratio of 1.5 observed in our study which is different from previous studies.[17] Even though females had a higher AD prevalence in most countries, relatively little is known regarding differences between females and males concerning the course and characteristics of AD. However, sex did not seem to influence the self-rated severity of AD,[18] but the impact of sex on the dupilumab prescription is unknown.

Conclusions

Our study shows that treatment with dupilumab is associated with a high level of satisfaction among treated patients. The hospital follow-up and the possibility to easily personalize the treatment according to clinical responses or side effects help explain the excellent perception of the treatment by the patients. Education and good patient-dermatologist communication allow patients to better understand their AD and their expectations of treatment.

Data Sharing Statement

The data that support the findings of this study are available upon reasonable request from the corresponding author, [FA]. The data are not publicly available due to their containing information that could compromise the privacy of research participants.

Statement of Ethics

All patients provided written informed consent.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, the study design, execution, acquisition of data, analysis and interpretation, or in all of these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Disclosure

The authors report no conflicts of interest in this work.

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