The impact of atopic dermatitis on sexual health


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Abstract

Background Sexual health is frequently affected by chronic diseases but has been poorly investigated in patients with atopic dermatitis (AD).

Objective To evaluate the risk factors for impaired sexual desire and its relationship with the burden and quality of life of patients with AD.

Methods A multicentre prospective transversal study in patients with AD. Socio-demographic and clinical data were obtained from all patients using a specifically developed questionnaire. In addition, patients were asked to answer validated scales, that is ABS-A, DLQI, SF-12 and EQ-5D.

Results A total of 1024 patients participated in the study. Severity of AD, sites involved and treatment type was found to negatively impact the sexual desire of patients and their partners. In addition, the involvement of the genital and visible areas was associated with a higher burden and more significant alterations in quality of life.

Conclusions The results of this study are substantial and clearly demonstrate the deep impact of AD on sexual health, its relationship with disease-related burden and alterations to quality of life. Psychosociological as well as neurosensory phenomena could help to understand these data.

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Conflicts of Interest

LM is a consultant for Beiersdorf, Bioderma, Expanscience, Galderma, Johnson&Johnson, Leo Pharma, Novartis, Pierre Fabre, Roche-Posay, Sanofi and Uriage. JS is a consultant for Sanofi. ZR is a consultant for Sanofi. FH is a consultant for Beiersdorf. CT is a consultant for EMMA. KH, SM and SH declare that they have no conflict of interests.

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SANOFI.
involvement of skin in a disease may affect intimacy. In clinical practice, it may be challenging for both the patient and the physician to discuss these sensitive issues directly, and consequently, the impact of a disease on sexual life is rarely assessed. Self-assessment using questionnaires may provide a viable alternative. Several specific questionnaires aimed at measuring sexual quality of life are available, and even a single question from a generic or organ-specific quality of life instrument, such as the DLQI, may yield some important information. Very few studies have investigated the impact of dermatologic diseases that involve the genitals on sexual life.4,7

A multicentre study from the European Academy of Psychiatry and Dermatology (ESDaP), using a single study design with standardized procedures and common research tools, provided very interesting data on the impact of skin diseases on quality of life and psychological well-being.11 A subsequent study investigated the perceived impact of several dermatologic conditions on patients’ sexual life by using item 9 of the Dermatology Life Quality Index (DLQI) across clinical and demographic variables in 13 European countries.4

A study on genital psoriasis showed that this condition was frequently associated with itching, pain or dyspareunia and that its presence decreased the frequency of sexual intercourse.7 Patients with genital psoriasis had dramatically reduced quality of life and sexual health as determined by the Dermatology Life Quality Index (DLQI), the Center for Epidemiological Studies Depression Scale and the Relationship and Sexuality Scale.7 This study highlighted the high prevalence of genital psoriasis and its profound impact on quality of life and sexual health.

Atopic dermatitis (AD) is also likely to have a high impact on sexual life, as lesions can be visible or located in the genital area and can be associated with sensory disorders such as itch, pain, paraesthesias, allodynia and psychiatric comorbidity. However, very few studies have addressed the sexual life of patients with AD. To the best of our knowledge, no studies have focused on patients with AD, and only one has focused on their partners.16

We therefore conducted a study on patients with AD, with the main aim of assessing the impact of this disease on sexual health and to identify risk factors for impaired sexual health.

**Patients and methods**

**Study design**

This study was approved by the Commission Nationale Informatique et Liberté (CNIL). This was a multicentre prospective transversal study.

**Patients**

The patients were members of the French Association of Eczema (Association Française de l’Eczéma) who spontaneously answer to the questionnaire proposed by email or were outpatients recruited from four dermatology centres in France (Brest–Bordeaux–Créteil–Reims) that systematically administered the questionnaire to all patients who attended the clinic during the study. Study participants responded anonymously to auto-administered questions.

**Instruments**

Questions on socio-demographics, disease history and management, lesion location and the impact of AD on personal and partner sexuality and sexual desire from the patient’s point of view were proposed. Disease severity was evaluated using the PO-SCORAD. Quality of life and burden were assessed with the SF12, DLQI, EQ-5D and ABS-A.

Silhouettes, based on Wallace Rule of Nine, were shown to subjects so they could highlight affected body areas. Four areas were then defined: ‘hands’, ‘visible areas’ (face, head, neck, hands, forearms, arms, elbows), ‘areas of sensuality’ (breasts and genital areas) and ‘genital areas’.

The Patient-Oriented Scoring AD (PO-SCORAD) index is a self-assessment score that allows the patient to comprehensively evaluate the actual course of AD; it uses subjective and objective criteria derived mainly from the SCORAD, a validated AD severity clinical assessment tool, and permits the specific identification of the genital area. Disease severity is defined as the following: mild (PO-SCORAD score <25), moderate (between 25 and 50) and severe (>50).

The SF-12 is a short version of the SF-36, a generic measure that assesses the health status of the general population. It is a self-questionnaire. Responses to questions are dichotomous (yes/no), ordinal (excellent to poor) or express a frequency (always to never). Two scores can be calculated from these 12 questions: a Physical Component Summary (PCS-12) and a Mental Component Summary (MCS-12). There is no overall score. The higher the score is, the better the quality of life.

The DLQI (Dermatology Life Quality Index) is a health quality of life scale specific to dermatologic disorders. It is comprised of 10 items that focus on six dimensions: ‘symptoms’, ‘daily activities’, ‘leisure’, ‘work’, ‘personal relationships’ and ‘treatment’. A total score (between 0 and 30) is calculated and can be expressed as a percentage. The higher the score, the more the patient’s quality of life is impaired. Health quality of life is considered impaired with a score of 6, very impaired with a score of 11, and extremely impaired with a score of 21 or greater.

EQ-5D is the abbreviation for the EuroQol-5 dimensions. For each dimension («Mobility», «Self-care», «Usual activities», «Pain/Discomfort», «Anxiety/Depression»), the respondent was asked to indicate his/her health state by ticking (or placing a cross in) the box after the most appropriate statement in each of the five dimensions. Each dimension has three options: no problems, some problems and extreme problems. At the end of the questionnaire, a visual analogue scale (EQ-VAS) records the
respondent’s self-rated health on a 20-cm vertical scale, with endpoints labelled ‘Best imaginable health state’ and ‘Worst imaginable health state’.

The Atopy Burden Score–Adult (ou ABS-A) is a questionnaire that evaluates the burden of AD in daily life. This score has 18 items, with seven response levels related to the burden of AD on the seven previous days. This validated score correlates with AD severity. A higher score indicates a higher burden.

**Statistical methods**

Quantitative variables were expressed as the mean and standard deviation. Qualitative variables were expressed as frequencies and percentages. Comparisons between groups were performed using Student’s t-test to evaluate two groups of quantitative variables or ANOVA when there were more than two groups. If the use of these tests was not indicated, non-parametric tests (Wilcoxon or Fisher’s exact test if necessary. Significance level was set at 5%. Data were analysed using SAS® software version 8.2 (SAS Institute Inc., Cary, NC, USA).

**Results**

**Population**

A total of 1024 patients answered the questionnaire, of which 596 were women (58.3%) and 427 were men (mean age: 42.7 ± 15.2 years). Among them, 283 (27.6%); 50 ± 13.9 years) suffered from mild AD, 414 (40.4%; 41.1 ± 14.8 years) from moderate AD and 327 (31.9%; 38.5 ± 14.6 years) from severe AD (P < 0.001). There was no significant difference in body mass index, income, academic level or family situation (single, in a relationship or in a family) between the three subsets. Patients with severe AD were younger (38.5 ± 14.6 years) than those with moderate (41.1 ± 14.8 years) or mild (50.0 ± 13.9 years) disease (P < 0.001).

**Affected areas**

The body surface area involved by the disease was significant: 29.9% (±19.2), 13.9% (±12.3) and 4.9 (±6.0), respectively. Table 1 gives the percentage of patients who had each affected area based on disease severity. Patients with severe AD were more broadly affected than those with moderate or mild disease, and visible as well as sensual areas were more frequently affected in these patients (P < 0.0001). Men more frequently noted genital involvement (15.5%) than women (10.7%).

Patients who had visible area involvement were found to have a higher burden of AD than those without (ABS-A score of 29.0 ± 20.6 vs. 14.9 ± 18.8; P < 0.0001). Quality of life was also altered, as assessed by the DLQI (10.4 ± 7.5 vs. 6.1 ± 7.7; P < 0.0001), EQ-5D (0.68 ± 0.28 vs. 0.70 ± 0.32; P < 0.05) and the mental score of the SF12 (MCS) (39.4 ± 10.1 vs. 43.8 ± 9.3; P < 0.0001). However, no significant differences were calculated in the physical score (PCS).

When a sensual area was affected, the burden of AD was higher than in those who did not have visible area involvement (ABS-A score of 38.2 ± 19.5 vs. 20.7 ± 19.4; P < 0.0001). Quality of life was also more affected, as assessed by the DLQI (13.9 ± 7.1 vs. 7.6 ± 7.2; P < 0.0001), EQ-5D (0.64 ± 0.31 vs. 0.71 ± 0.28; P = 0.0005), EQSD-VAS (60.2 ± 21.9 vs. 64.9 ± 22.1; P < 0.0001) and the mental score of the SF12 (MCS) (37.0 ± 9.3 vs. 41.8 ± 10.1; P < 0.0001). However, again there was no significant difference in the physical score (PCS).

Among patients with genital involvement, 59% declared that it was the most annoying involvement. Burden (ABS-A: 39.4 ± 19.5 vs. 23.7 ± 19.4 (P < 0.001) and quality of life (DLQI: 8.9 ± 7.1 vs. 4.5 ± 7.2; EQSD-VAS: 58.5 ± 21.2 vs. 63.2 ± 22.3; MCS: 36.5 ± 9.1 vs. 40.9 ± 10.2) scores were significantly (P < 0.001) worse in patients with genital lesions.

**Impact on sexuality**

Table 2 shows patient answers to the question about the impact of AD on sexual desire. This impact was affected by the severity of the disease (P < 0.0001). Table 3 shows data from the validated questionnaires regarding the impact of AD on the libido. There were significant differences between patients who reported an impact vs. those who did not on all scales (P < 0.0001).

Similar results were obtained with the questions ‘Do you think that the appearance of your AD (redness, dryness) has an impact vs. those who did not on all scales (P < 0.0001).

<table>
<thead>
<tr>
<th>Table 1 The percentage of patients with specific anatomic involvement according to the severity of AD (more one side can be involved)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild AD N = 283</td>
</tr>
<tr>
<td>Hands (%)</td>
</tr>
<tr>
<td>33 (11.7%)</td>
</tr>
<tr>
<td>160 (56.5%)</td>
</tr>
<tr>
<td>24 (8.5%)</td>
</tr>
<tr>
<td>8 (2.8%)</td>
</tr>
</tbody>
</table>

**Table 2 Answers to the question: ‘Has your AD had an impact on your sexual desire?’ based on severity**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Mild AD N = 283</th>
<th>Moderate AD N = 414</th>
<th>Severe AD N = 327</th>
<th>Global N = 1024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>140 (49.5%)</td>
<td>155 (37.6%)</td>
<td>56 (17.1%)</td>
<td>351 (34.3%)</td>
</tr>
<tr>
<td>Sometimes</td>
<td>23 (8.1%)</td>
<td>147 (35.7%)</td>
<td>149 (45.6%)</td>
<td>319 (31.2%)</td>
</tr>
<tr>
<td>Often</td>
<td>2 (0.7%)</td>
<td>45 (10.9%)</td>
<td>63 (19.3%)</td>
<td>110 (10.8%)</td>
</tr>
<tr>
<td>Always</td>
<td>5 (1.8%)</td>
<td>18 (4.4%)</td>
<td>31 (9.5%)</td>
<td>54 (5.3%)</td>
</tr>
<tr>
<td>Not concerned</td>
<td>113 (39.9%)</td>
<td>47 (11.4%)</td>
<td>28 (8.6%)</td>
<td>188 (18.4%)</td>
</tr>
</tbody>
</table>

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treatment for your AD has an impact on your sexuality? This impact was greater based on the severity of the disease ($P < 0.0001$), and all scores (ABS-A, DLQI, MCS, PCS, EQ5D and EQ5D-VAS) were more affected when patients declared that AD had an impact on their sexuality (always $>$ often $>$ sometimes $>$ never) ($P < 0.0001$).

**Impact of the partner’s sexual desire**

Table 4 lists answers to the question on the impact of AD on the partner’s sexual desire from the patient’s point of view. This impact was greater with increased disease severity ($P < 0.0001$). There were also significant differences on all scales ($P < 0.0001$) between patients who reported an impact and those who did not.

**Discussion**

This study analysed sexual health in AD in a large number of patients, permitting important new findings. The main conclusions of this study are that AD, its appearance and its severity have deep consequences on patient sexual desire. Further, patients believe that AD also impacts their partners’ desire. Involvement of the genitals, sensual areas and visible areas is significant risk factors for impaired sexual desire, as well as higher burden and impaired quality of life. Until now and to the best of our knowledge, no study has specifically studied the role of genital involvement on sexual health in patients with AD; 12% of patients reported a genital involvement in our study.

Many reasons could decrease the sexual desire and potentially the sexual activity of patients suffering from AD. Patients may have had allergic reactions to latex, seminal fluid or cosmetics from their partner or may fear them. The presence of lesions on the genital area, breasts or hands, or the presence of lesions on visible areas has frequently had negative consequences on self-esteem and stigmatization feelings (especially genital involvement). Psychiatric comorbidity is very common in patients with AD, especially depression (until suicidal ideation) and anxiety.

Unpleasant sensations, such as itching, pain and paraesthesias, likely influence impaired sexual health beyond the lesions themselves. Sensory disorders are very frequent in patients with AD. Atopic patients frequently have hyperknesis (an increased perception of itch) and alloknesis (a touch-evoked itch). Although it has been never explored, we believe that these disorders seriously limit patient sexual desire and whole body perception in men as well as in women, especially of the genital area and the breasts.

Some studies on the sexual health of patients with AD have been performed previously, but none included as many patients as our study. A German study on 24 patients showed that the exchange of tenderness in patients with AD and psoriasis was significantly reduced.

In the European study, the impact on sexual difficulties, assessed by answers to the question 9 of the DLQI, was particularly high in patients with hidradenitis suppurativa, prurigo, blistering disorders, psoriasis, urticaria, eczema, infections of the skin and pruritus. In this study, an impact on sexuality was strongly associated with itching, depression, anxiety and even suicidal ideation.

A qualitative study of patients with acne, psoriasis and atopic eczema showed that these conditions had adverse effects on participants’ self-perceived sexual attractiveness and self-confidence and that psoriasis and eczema in particular also had marked effects on sexual well-being and the capacity for intimacy. This finding was related to issues of self-esteem and sexual self-image that were often pervasive, resulting in marked behavioural avoidance of intimate situations and continued effects on sexual well-being even in long-established sexual relationships. The effects of psoriasis and eczema on sexual well-being and sexual relationships were impacted more by the appearance and texture of non-genital skin than by the involvement of genital skin.

In another study on a smaller sample, it was shown that 57.5% of patients with AD had decreased sexual desire and that 36.7% of their partners reported that the appearance of eczema had an impact on their sexual life. The partners’ quality of life did not appear to be particularly impaired, but 36.5% reported that the appearance of eczema had an impact on their sex life.

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**Table 3** Answers to the question: ‘Has your AD had an impact on your sexual desire?’ stratified by burden or impact on quality of life

<table>
<thead>
<tr>
<th></th>
<th>Never $N = 351$</th>
<th>Sometimes $N = 319$</th>
<th>Often $N = 110$</th>
<th>Always $N = 54$</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO-SCORAD</td>
<td>30.8 ($\pm 17.4$)</td>
<td>48.5 ($\pm 16.6$)</td>
<td>52.7 ($\pm 15.2$)</td>
<td>52.3 ($\pm 18.9$)</td>
</tr>
<tr>
<td>ABS-A</td>
<td>14.3 ($\pm 14.8$)</td>
<td>36.4 ($\pm 15.6$)</td>
<td>45.2 ($\pm 15.4$)</td>
<td>52.9 ($\pm 20.1$)</td>
</tr>
<tr>
<td>DLQI</td>
<td>5.5 ($\pm 5.9$)</td>
<td>13.3 ($\pm 6.2$)</td>
<td>16.5 ($\pm 6.0$)</td>
<td>18.0 ($\pm 6.6$)</td>
</tr>
<tr>
<td>PCS</td>
<td>51.1 ($\pm 8.9$)</td>
<td>51.1 ($\pm 7.9$)</td>
<td>49.0 ($\pm 7.3$)</td>
<td>43.4 ($\pm 8.8$)</td>
</tr>
<tr>
<td>MCS</td>
<td>44.3 ($\pm 9.2$)</td>
<td>37.5 ($\pm 7.8$)</td>
<td>34.9 ($\pm 9.2$)</td>
<td>33.8 ($\pm 10.4$)</td>
</tr>
<tr>
<td>EQ-SD</td>
<td>0.74 ($\pm 0.25$)</td>
<td>0.68 ($\pm 0.28$)</td>
<td>0.63 ($\pm 0.29$)</td>
<td>0.45 ($\pm 0.37$)</td>
</tr>
<tr>
<td>EQ5D-VAS</td>
<td>68.0 ($\pm 21.5$)</td>
<td>60.9 ($\pm 20.3$)</td>
<td>61.1 ($\pm 19.8$)</td>
<td>48.5 ($\pm 24.5$)</td>
</tr>
</tbody>
</table>

Mean (SD) scores are shown, depending on the answer to the question on sexual desire.

**Table 4** Answers to the question: ‘Has your AD had an impact on your partner’s sexual desire?’ stratified by severity

<table>
<thead>
<tr>
<th></th>
<th>Mild AD $N = 283$</th>
<th>Moderate AD $N = 413$</th>
<th>Severe AD $N = 327$</th>
<th>Global AD $N = 1023$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>145 (51.2%)</td>
<td>204 (49.4%)</td>
<td>117 (35.8%)</td>
<td>466 (45.6%)</td>
</tr>
<tr>
<td>Sometimes</td>
<td>11 (3.9%)</td>
<td>93 (22.5%)</td>
<td>109 (33.3%)</td>
<td>213 (20.8%)</td>
</tr>
<tr>
<td>Often</td>
<td>5 (1.8%)</td>
<td>37 (9%)</td>
<td>35 (10.7%)</td>
<td>77 (7.5%)</td>
</tr>
<tr>
<td>Always</td>
<td>2 (0.7%)</td>
<td>11 (2.7%)</td>
<td>14 (4.3%)</td>
<td>27 (2.6%)</td>
</tr>
<tr>
<td>Not concerned</td>
<td>120 (42.4%)</td>
<td>68 (16.5%)</td>
<td>52 (15.9%)</td>
<td>240 (23.5%)</td>
</tr>
</tbody>
</table>

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Finally, a case-control study on administrative claims data showed that patients with erectile dysfunction were more likely to have prior AD than controls (OR = 1.60).

Our study has some limitations: the absence of questions about itching (except the question 1 of DLQI) and other unpleasant sensations, as well as questions about sexual activity (foreplay as well as sexual intercourse) or sexual diversity (homosexuals and heterosexuals) and the non-representativeness of the sample according to sex, age or severity of the disease or intensity of itch.

Nonetheless, the results of this study are powerful and clearly demonstrate the substantial impact of AD on sexual health and its relationship with burden and quality of life. It is highly important to take into account these problems when assessing disease severity and treatment efficacy. Clinicians should be especially aware of the ability of AD to profoundly affect patients’ sexual well-being. Moreover, dermatologists dealing with patients with AD should clearly include adequate and tailored psychological and sexual support in the treatment plan when the genital areas are involved.

References