Childhood trauma and resilience in psoriatic patients: A preliminary report

Maria Luigia Crosta\textsuperscript{b*,a}, Clara De Simone\textsuperscript{b,1}, Salvatore Di Pietro\textsuperscript{a}, Mariateresa Acanfora\textsuperscript{a}, Giacomo Caldarola\textsuperscript{b}, Lorenzo Moccia\textsuperscript{a}, Antonino Callea\textsuperscript{c}, Isabella Panaccione\textsuperscript{d}, Ketty Peris\textsuperscript{b}, Lucio Rinaldi\textsuperscript{a}, Luigi Janiri\textsuperscript{a}, Marco Di Nicola\textsuperscript{a}

\textsuperscript{a} Institute of Psychiatry and Psychology, Fondazione Policlinico Universitario “A. Gemelli”, Università Cattolica del Sacro Cuore, Rome, Italy
\textsuperscript{b} Institute of Dermatology, Fondazione Policlinico Universitario “A. Gemelli”, Università Cattolica del Sacro Cuore, Rome, Italy
\textsuperscript{c} Science of Education, LUMSA University, Rome, Italy
\textsuperscript{d} NESMOS Department, School of Medicine and Psychology, Sant’Andrea Hospital, Sapienza University, Rome, Italy

Aims: Psoriasis is a chronic inflammatory skin disease with a complex etiology, involving the immune system, genetic factors, and external/internal triggers, with psychosomatic aspects. The aim of the study was to investigate childhood trauma and resilience in a psoriatic sample compared with healthy controls. Correlations between childhood trauma, resilience, quality of life, clinical data and psoriatic features were also evaluated.

Methods: Seventy-seven psoriatic patients and seventy-six homogeneous healthy controls were enrolled. We used the Psoriasis Area and Severity Index (PASI) to assess the severity of psoriasis and the Skindex-29 to measure health-related quality of life. The psychometric battery included the Childhood Trauma Questionnaire (CTQ) and the Connor-Davidson Resilience Scale (CD-Risc) to assess trauma exposure and resilience, respectively.

Results: Psoriatic patients showed a significant prevalence of childhood trauma and a lower resilience level compared to healthy controls. Associations between traumatic experiences, low resilience and reduced quality of life in psoriatic subjects were also observed.

Conclusions: A multidisciplinary approach is helpful to investigate clinical aspects, trigger factors and psychophysiological stress response in psoriatic subjects. Improving resilience with an early psychological intervention focused on self-motivation and strengthening of self-efficacy could facilitate the management of psoriasis.

1. Introduction

Psoriasis is a common, chronic inflammatory skin disease characterized by rounded erythematous and dry scaling patches. The reported prevalence ranges from 0.2% to 4.8%, with no gender differences [1]. Psoriasis has a complex etiology involving genetic risk factors, abnormal activation of the immune system, and external/internal triggers, such as mild trauma, sunburn, infections, systemic drugs, and stress [2,3]. Individuals with psoriasis are reported to have increased risk of developing other serious clinical conditions like Crohn disease, metabolic syndrome, diabetes, and ischemic cardiovascular disease [4,5]. Among dermatologic conditions, psoriasis has the highest association with psychiatric illness, including mood, anxiety, and personality disorders. Moreover, psoriatic patients have an increased risk of experiencing lifetime suicidal ideation [6,7]. However, psychiatric comorbidities in psoriatic patients are often undetected and untreated [8]. Several shared biological etiopathogenic mechanisms, including dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, increased levels of pro-inflammatory cytokines, and abnormalities in both adrenergic and corticosteroid receptors functioning may underlie the association between psoriasis and psychiatric illness [9]. Distinct psychopathological factors such as alexithymia (i.e., difficulty in understanding and expressing one's feelings) have also been consistently associated with psoriasis [10] and other psychosomatic disease [11], as well as with several mental disorders [12]. Of note, alexithymic traits are often related to early traumatic experiences [13] and several psoriatic patients have histories of childhood abuse or neglect [14]. Trauma may affect etiopathogenesis and biological progression of psoriasis possibly via alterations in HPA axis and immune system functioning, and via abnormalities in catecholamines and neuropeptides release [15,16]. Moreover, by affecting optimal right brain and immune system development, childhood trauma can adversely impact...
both emotion regulation abilities and stress resilience [17,18].

Resilience is the process of adapting in face of adversity, trauma, tragedy, threats or significant sources of stress [19]. The role of stress in the onset of psoriasis, and as a trigger for exacerbations, has been debated for many years [20]. Life stressors have been ascribed as both a cause of psoriasis and as an aggravating factor of the disease in adults and children, regardless of the nature of the stressor. Dysfunctions of the HPA axis may underlie impaired resilience mechanisms and this system has been suggested to mediate the relationship between stress and skin disease [20,21]. Daily stressors might influence psoriasis outcome by affecting cortisol levels at moments of acute stress. In fact, as shown in several stress tests, cortisol levels are more elevated in patients with psoriasis than in healthy controls [22]. However, psoriatic patients with persistently high levels of perceived daily stressors are characterized by a psychophysiological profile of lowered cortisol levels and may be particularly vulnerable to the influence of stressors on their psoriasis. Therefore, on the one hand, chronic stress might lead to reduced HPA axis reactivity, while, on the other hand, possible disease-specific mechanisms that increase cortisol responses might be present [23].

Evidence from animal models suggests that early life maternal care acts on glucocorticoid receptor expression in the hippocampus, influencing emotional behaviour. Adequate levels of maternal care are associated with decreased DNA methylation of the Glucocorticoid Receptor (GR) gene, higher levels of GR expression, greater feedback inhibition of the HPA axis and optimal stress responses in adulthood. The GR gene is likely just one of many epigenetic targets associated with a more successful coping response later in life [24].

Exposure to traumatic experiences and impaired coping strategies may therefore influence the onset and course of psoriasis, although their impact on the severity of the disease is still debated. To the best of our knowledge, no previous study has yet addressed resilience capacities in psoriatic individuals. Hence, we primarily focused on investigating childhood trauma and resilience in a sample of psoriatic patients compared with a healthy control group. Secondary, we evaluated the correlations between childhood trauma, resilience, quality of life, clinical data and psoriatic features.

2. Methods

2.1. Subjects

Seventy-seven outpatients were enrolled at the Institute of Dermatology of the Fondazione Policlinico Universitario “A. Gemelli” in Rome, between May 2016 and September 2017. The inclusion criteria were an age of 18–65 years and a diagnosis of psoriasis vulgaris, by clinical criteria and skin biopsy (International Classification of Disease, 10th revision). Patients with erythrodermic, guttate or inverse psoriasis were excluded. The control group consisted of 76 subjects recruited from the general population who did not report a current or past diagnosis of psoriasis. The exclusion criteria for both groups were ongoing systemic drug therapy (corticosteroids, immunosuppressive or biological drugs), alcohol/substance abuse in the last two months, psychiatric comorbidity (evaluated by the Structured Clinical Interviews for DSM Axis I and II disorders), MMSE score < 26. All participants were Caucasians. Anonymity was guaranteed to all participants. The study protocol fully complied with the guidelines of the local Ethics Committee and was approved by the Institutional Review Boards in agreement with local requirements. The study was conducted in accordance with Good Clinical Practice guidelines and the Declaration of Helsinki (1964) and subsequent revisions. All subjects enrolled gave their written informed consent prior to their inclusion in the study and participated without receiving any form of payment.

2.2. Procedure and assessment

The Psoriasis Area and Severity Index (PASI) was used for rating the severity of psoriasis. PASI combines the assessment of the severity of lesions and the extent of the affected area in a single index score [25].

The psychometric evaluation included the validated Italian versions of the (Cronbach's alphas were measured in the present sample):

- Childhood Trauma Questionnaire-Short Form (CTQ-SF). It is a retrospective, self-reported screening measure for traumatic experiences in the infancy (Cronbach's alpha = 0.77), including 28 items with 5 subscales, 3 of which assessing abuse (emotional, with a Cronbach's alpha = 0.75; physical, with a Cronbach's alpha = 0.78; sexual, with a Cronbach's alpha = 0.69) and 2 assessing neglects (emotional, with a Cronbach's alpha = 0.90; physical, with a Cronbach's alpha = 0.71). Other traumatic events that may occur in childhood, such as bereavement or major illness, are not rated [26]. Higher scores indicate a greater childhood trauma.

- Connor-Davidson Resilience scale (CD-Risc). It comprises 25 items, each rated on a 5-point scale (0–4), with higher scores reflecting greater resilience (Cronbach's alpha = 0.86). It contains the following five subscales: (1) personal competence, high standards, tenacity (Cronbach's alpha = 0.84); (2) trust in one's instincts, tolerance of negative affect, strengthening effects of stress (Cronbach's alpha = 0.71); (3) positive acceptance of change, secure relationships (Cronbach's alpha = 0.72); (4) control (Cronbach's alpha = 0.71); (5) spiritual influences (Cronbach's alpha = 0.70) [27].

- Skindex-29. It is a self-administered questionnaire that has been designed for measuring health-related quality of life in dermatological patients (Cronbach's alpha = 0.96). It consists of 29 items scored on a 5-point Likert scale (never, rarely, sometimes, often, all the time) and it gives 3 scale scores assessing the burden of symptoms (Cronbach's alpha = 0.86), social functioning (Cronbach's alpha = 0.92), and emotional state (Cronbach's alpha = 0.91). Higher scores indicate a greater impact of skin diseases on quality of life [28].

2.3. Statistical analysis

Statistical analyses were performed using the software IBM-SPSS Statistics, Version 24.0. Dichotomous data were described as numbers and percentages and compared using either the Chi-square test or Fisher's exact test; continuous data were reported as mean (M) ± standard deviation (SD) and compared by independent Student's t-test, or by non-parametric Mann-Whitney U test if not normally distributed (corrected via multiple comparison Bonferroni corrections). Bravais-Pearson or non-parametric Spearman's rank correlation coefficients were reported as measures of association between continuous variables.

3. Results

Psoriatic patients (n = 77) and healthy control subjects (n = 76) were homogeneous in terms of gender, age, education, and occupation. Demographic and clinical characteristics of the sample, along with psoriatic patients' PASI and Skindex-29 scores, age of onset and duration of illness are reported in Table 1.

Psoriatic patients scored significantly higher than healthy controls on childhood trauma as to CTQ total scores. Significant differences were also found on “Sexual abuse”, “Emotional neglect” and “Physical neglect” subscales, and maintained after Bonferroni correction with α = 0.005. Moreover, psoriatic patients showed lower resilience levels than healthy controls according to CD-Risc total scores. In particular, a significant difference was found in “Control” subscale, also after Bonferroni correction with α = 0.005. CTQ and CD-Risc scores are
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