

Evaluation of the immunological profile and the quality of life in patients with lichen sclerosus (LS)

Introduction

Lichen sclerosus is a chronic, distressing skin condition. The explicit aetiology of LS is still not clear. Genetic, infectious, autoimmune, hormonal and environmental factors play a role in its pathogenesis. Moreover, chronic inflammation and oxidative stress may have considerable influence on its development. The disease affects males and females but is more prevalent in women. The most frequent location of lesions is the anogenital area. The symptoms of the disease include itching, burning, sexual dysfunctions, pain during voiding or defecation and may lead to decreased quality of life.

The aim of the study is to assess the impact of the disease on work productivity and the sexual quality of life in female and male patients with LS by means of selected, standardized questionnaires. Moreover, the research seeks to analyse the expression and correlation of inflammatory markers (IL-22, IL-23, IL-12, IL-17, STAT3, STAT4, TNF α) in tissue obtained in a group of patients with phimosis who have undergone circumcision with histopathologically confirmed final diagnosis of genital LS. Currently, 55 male patients have been enrolled in the clinical original research. During circumcision, tissue was surgically removed and stored for further examination. Histopathological examination confirmed LS diagnosis in 14 tissues, which is less than statistically expected. Preliminary results evaluating the expression of IL-22, IL-23, IL-12, IL-17, STAT3, STAT4, and TNF-alpha by qPCR in 16 tissues are inconclusive due to the small sample size. The evaluation of expression in the remaining samples is scheduled for May/June 2024.

Based on preliminary research the following hypotheses were formulated. 1. The quality of sexual life and work productivity in patients with genital lichen sclerosus is decreased. 2. An increased local expression of IL-22, IL-23, IL-12, IL-17, STAT3, STAT4, TNF α can be observed in patients with male genital lichen sclerosus. In the above poster, data regarding the impact of genital lichen sclerosus on work productivity and sexual quality of life in females, as well as pilot data from a clinical original study, are presented.

Materials and methods

An online survey including: Work Productivity and Activity Impairment: General Health (WPAI:GH), Patient Health Questionnaire-9 (PHQ-9), The Sexual Quality of Life-Female (SQOL-F) questionnaires was conducted. Also, demographic and clinical data: age, the place of residence, professional activity, previous and current treatment, was collected. Fifty-one adult female patients with genital LS filled an online questionnaire and were enrolled in the study. The corresponding control group consisting of 45 healthy women was established. Cases and controls were matched based on gender, age, occupation and place of residence. Statistical analysis using the Mann Whitney U test, Chi-squared test was performed. A p-value ≤ 0.05 was considered statistically significant.

From 2021 to date, 55 male patients have been enrolled in the clinical original research. The study group consists of Caucasian male adults with phimosis who underwent circumcision and received a histopathologically confirmed final diagnosis of genital LS. The control group comprises Caucasian male adults who underwent circumcision for reasons other than LS. During circumcision, tissue was surgically removed and stored for further examination. A pilot study evaluating the expression of IL-22, IL-23, IL-12, IL-17, STAT3, STAT4, and TNF-alpha by qPCR in 16 tissues was performed. The evaluation of expression in the remaining samples is scheduled for May/June 2024.

Results

- 75% of women with genital LS declared that the disease significantly affects their sexual life.
- The selected results are presented graphically in the Fig. 1.

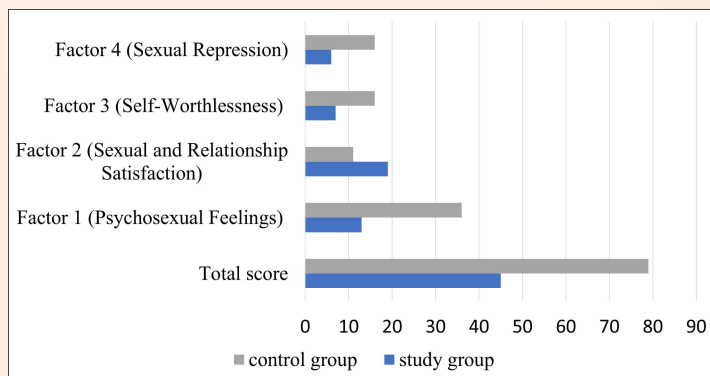


Figure 1. Comparison of the median value of the Sexual Quality of Life-Female Questionnaire results in the study and control group (p<0.0001).

- The findings from the pilot study, as illustrated in Figure 2, do not demonstrate statistical significance.

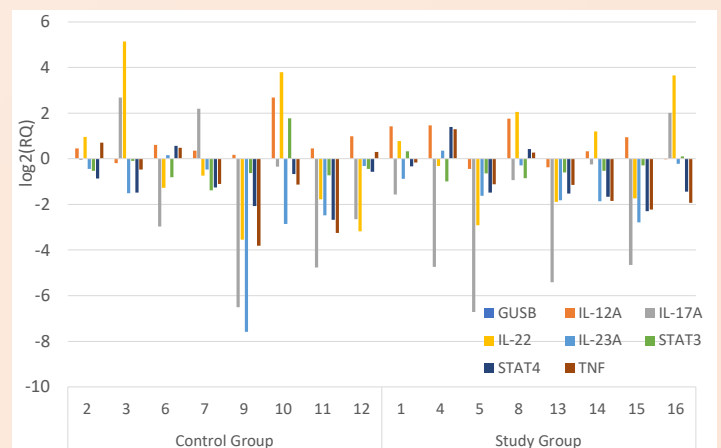


Figure 2. Preliminary results evaluating the expression of IL-22, IL-23, IL-12, IL-17, STAT3, STAT4, and TNF-alpha by qPCR in 16 tissues

Conclusions

- The sexual quality of life in women with genital LS is decreased.
- Female genital LS may exert a negative impact on the professional life.
- Female genital LS is associated with a higher risk of depressive disorder.

- A larger sample size is needed to provide more robust and reliable results. Laboratory assessment of the remaining samples is scheduled for May/July 2024, which will contribute to a more comprehensive analysis.

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