registered and, of these, 28% accurately reported a preregistered specific outcome. The respective rates in this study (66% and 67%) are a notable improvement. This may reflect that our study assessed only high-impact-factor journals, the continued impact of policies mandating prospective trial registration, and the increasing recognition of the importance of prospective trial registration by dermatology journals.

Discerning whether primary outcome discrepancies reflect benign variations in levels of detail or more sinister post hoc selection of results based on significance can be challenging. Of concern, previous work has associated discrepancies with an increased likelihood of larger effect sizes and statistically significant results. Currently, the CONSORT guidelines acknowledge that changes to preregistered outcomes can occur, but that in such instances the change and rationale should be detailed in the manuscript. In the absence of an explanation, discrepancies should raise suspicion of bias.

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Funding sources: none.

Conflicts of interest: The authors declare they have no conflicts of interest.

Frontal fibrosing alopecia: a descriptive cross-sectional study of 711 cases in female patients from the UK

DOI: 10.1111/bjd.19399

Dear Editor, Frontal fibrosing alopecia (FFA) is an inflammatory primary scarring alopecia of uncertain aetiology that represents a variant of lichen planopilaris. It predominantly, although not exclusively, affects postmenopausal women. Its pathogenesis is characterized by immune-mediated follicular destruction at the level of the hair follicle, which leads to a clinical phenotype of progressive frontotemporal hair and eyebrow loss that is often preceded by widespread body-hair loss. Histologically, a lichenoid inflammatory infiltrate surrounds the isthmus and infundibulum of the hair follicle, and this progresses to follicular scarring and dropout in advanced disease. We recently completed the first genome-wide association study (GWAS) in FFA coupled with transcriptomic and metabolomic analyses, which have provided important insights into its pathogenesis. We have conducted and herein present a descriptive cross-sectional study of the clinical phenotype in women from the FFA UK GWAS Cohort.

Ethical approval was obtained from the Northamptonshire NRES Committee, UK (REC 15/EM/0273). Patients with a formal diagnosis of FFA made by a consultant dermatologist from 20 secondary care dermatology departments across the UK were eligible for inclusion. A diagnosis of FFA was made based on clinical criteria, with histological confirmation if required. Each patient was assessed for multiple clinical variables based on a standardized pro forma. Analysis was limited to female participants of Eurasian ancestry in line with our previous GWAS. Statistical analysis was descriptive and exploratory, estimating frequencies and measures of centrality and spread, and participants for whom data were missing for a given variable were excluded from the analysis. All analyses were conducted using Stata version 15 (StataCorp, College Station, TX, USA).

Phenotypic data were available for 711 UK women with FFA among a total of 1044 participants in the GWAS cohort. Their median age was 66 (interquartile range 59–72) and the median duration of scalp hair loss was 7 years (interquartile range 5–10). In 485 of 663 (73·2%) participants with available data, frontotemporal hairline recession occurred following menopause. Other clinical characteristics and comorbidities are summarized in Table 1. Perifollicular erythema was present in 77·3% and hyperkeratosis in 26·0% of participants. In addition to frontotemporal recession, concomitant occipital recession was noted in 26·0%. Eyebrow loss was noted in 90·6% and

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Eyelash loss in 44.5%. Limb hair loss was also documented in 77.5% and most commonly affected both arms and legs, while concomitant axillary or pubic hair loss was reported in 67.0%. Concurrent multifocal involvement suggesting coexistence of classic lichen planopilaris (14.7%) and nail changes of any type (23.7%) were noted in a smaller proportion of participants. Other forms of lichen planus were seen in 9.5% of participants, with oral (5.1%) and vulval disease (3.5%) being most prevalent.

Only 44.0% of our cohort were prescribed a medication relevant to their FFA. The most frequent treatment was hydroxychloroquine (24.0%), with other treatments such as topical corticosteroids (16.6%), oral tetracycline antibiotics (10.1%), topical calcineurin inhibitors (3.8%), intralesional corticosteroids (1.7%) and oral corticosteroids (1.3%) being less common. Use of systemic immunosuppressant or antiproliferative agents including retinoids, mycophenolate mofetil, ciclosporin and methotrexate was rare (2.1%).

In keeping with the immune-mediated pathogenesis of FFA, 20.7% of participants reported at least one comorbid autoimmune disease (Table 1). The most common was autoimmune thyroid disease (12.9%), followed by coeliac disease (1.5%) and pernicious anaemia (1.2%). As hormonal aberrations have been implicated in the pathogenesis of FFA, we also examined whether certain endocrine disorders were prevalent in this cohort. A history of oestrogen deficiency secondary to oophorectomy or primary ovarian insufficiency was present in 5-6% of women, while 2-3% reported exposure to selective oestrogen receptor modulators (tamoxifen or clomiphene). With regard to exogenous hormone use, the oral contraceptive pill was used for >6 months by 71.2% of women.

In summary, this descriptive study outlines the clinical characteristics and treatment modalities in a cohort of 711 women with FFA, recapitulating findings described by other international studies. Analysis of comorbidities revealed that autoimmune disease, thyroid hormone abnormalities and oestrogen deficiency were more prevalent than in the general population, while the frequency of oral contraceptive use was similar. These findings accord with other epidemiological studies and the results of our genetic investigation, which implicated causal genetic variation related to antigen presentation and hormone or xenobiotic metabolism in FFA pathogenesis.

Acknowledgments: We thank the study participants for their help. We thank the NIHR Rare Genetic Disease Research Consortium Agreement Team, especially Gillian Borthwick, for their help with setting up multiple UK research participating sites. We thank Emma Stell and the numerous research assistants and nurses, especially Teena Mackenzie, Sophie Devine, Ruth Joslyn, Sonia Baryschpolce, Anne Thomson, Pauline Buchanan and Caroline White for their help with recruitment.

Table 1 Clinical characteristics of the female participants (n = 711)

| Characteristic                          | n (%) | Missing data |
|----------------------------------------|-------|--------------|
| Clinical features                      |       |              |
| Perifollicular erythema                | 508 (77.3) | 54 |
| Follicular hyperkeratosis              | 119 (26.0) | 253 |
| Occipital recession                    | 178 (26.0) | 27 |
| Eyebrow loss                           | 620 (90.6) | 27 |
| Eyelash volume loss                    | 311 (44.5) | 12 |
| Limb hair loss                         | 543 (77.5) | 10 |
| Arm                                    | 15 (3.2) | 235 |
| Leg                                    | 49 (10.3) | 235 |
| Both                                   | 254 (53.4) | 235 |
| Axillary and pubic hair loss           | 464 (67.0) | 18 |
| Axillary                               | 94 (20.0) | 242 |
| Pubic                                  | 17 (3.6) | 242 |
| Both                                   | 129 (27.5) | 242 |
| Multifocal scalp hair loss             | 95 (14.7) | 66 |
| Nail changes (any type)                | 165 (23.7) | 16 |
| Comorbidities                          |       |              |
| Lichen planus                          | 60 (9.5) | 78 |
| Oral                                   | 32 (5.1) | 78 |
| Vulva                                  | 22 (3.5) | 78 |
| Skin                                   | 7 (1.1) | 78 |
| Nails                                  | 2 (0.3) | 78 |
| Autoimmune disease                     |       |              |
| Autoimmune thyroid disease             | 88 (12.9) | 29 |
| Coeliac disease                        | 10 (1.5) | 29 |
| Pernicious anaemia                     | 8 (1.2) | 29 |
| Previous oestrogen deficiency          | 38 (5.6) | 37 |
| Previous SERM use                      | 15 (2.3) | 54 |
| Prior OCP use (> 6 months)             | 445 (71.2) | 86 |

OCP, oral contraceptive pill; SERM, selective oestrogen receptor modulator.

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Sustained improvement of surgical scar appearance 1 year after early intervention with nonablative fractional laser treatment: a randomized controlled split-wound trial

DOI: 10.1111/bjd.19400

Dear Editor,

Early laser treatment during wound healing has increasingly gained focus to improve scar formation. The majority of trials addressing early laser intervention for improving scar formation present short follow-up times of 1–3 months. Considering the pathophysiology of scar formation, a scar is not mature until a year after injury. Thus, the effect of early laser treatment should be evaluated at least 1 year after scar intervention, and knowledge about long-term effect is lacking.

In 2018 our study group presented the 3-month follow-up data of a clinical trial on nonablative fractional laser (NAFL) treatment in early wound healing for improvement of scar formation. This paper provides long-term data at the 1-year follow-up.

The clinical trial has previously been described in detail. In short, this was a randomized, controlled, intradividual split-surgical wound study, comparing 1540-nm erbium-glass NAFL-treated scar halves vs. untreated control halves. Three NAFL treatments were applied on the randomized scar halves using two handpieces, sequentially distributing energy (40–50 mJ per microbeam) deeply and more superficially in the skin before excision, at suture removal and 6 weeks after surgery. Each surgical wound’s central 0.5-cm section was excluded from evaluation to prevent a NAFL bystander effect on the untreated control half.

Clinical evaluations at the 1-year follow-up were blinded and based on the Patient Observer Scar Assessment Scale (POSAS) as the primary outcome and the Vancouver Scar Scale (VSS) as the secondary outcome. Descriptive statistics were used to report characteristics accordingly. Outcomes lacked normal distribution and thus a nonparametric test of paired data was applied (Wilcoxon signed-rank test). P-values < 0.05 were considered statistically significant. Stata v.14.2 was used (StataCorp, College Station, TX, USA).

Among the 30 patients who completed the 3-month follow-up, 24 completed 1-year follow-up. The results are presented in Table 1. Fifteen men and nine women were included, and the median age was 63 years (interquartile range (IQR) 49–79). Scars were located on the thorax (n = 14), upper and lower extremities (n = 3 and n = 4) and the head and neck area (n = 3). The mean length of included scars was 4.6 cm (range 2.5–7.0). Neither sex, age nor scar length differed significantly between the patients who completed 1-year follow-up and those who did not. However, the localization of scars was significantly different, as only patients with head and neck scars were lost to follow-up. Among the six patients who were lost to follow-up, four (67%) had a better POSAS-total score for NAFL-treated scar halves, one patient had a better score for the control half, and one patient had no score difference at the 3-month evaluation.

The primary outcome, POSAS-total, showed significant improvement in the NAFL-treated scar halves with a median of 11 (IQR 8.5–13.5), compared with the control halves, with a median of 12 (IQR 10.5–15; P = 0.037). The variation in POSAS-total was distributed as follows: 46% of the scars had a better score for the NAFL-treated scar halves with a range of 1–7 points; in 17% the control scar halves had a better score.