Research letter

Twenty-year follow-up using a postal survey of childhood vitiligo treated with narrowband ultraviolet B phototherapy

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Dear Editor, Vitiligo is a depigmenting skin disorder with an estimated prevalence of 1%.[1] Childhood-onset vitiligo occurs in approximately one-third of all cases.[2] Early-onset childhood vitiligo tends to be a more extensive and progressive type of vitiligo.[3] Narrowband ultraviolet B (NB-UVB) phototherapy is an effective treatment option in active vitiligo and leads to > 75% repigmentation in 14–75% of childhood cases.[4,5] Unfortunately, no evidence is available for whether this repigmentation is long lasting. To date, no data are available on the long-term efficacy and safety of NB-UVB in childhood vitiligo.

This study was designed as a long-term follow-up study after our prospective open uncontrolled clinical trial of 20 years ago in which 51 children with nonsegmental vitiligo were treated with NB-UVB twice weekly for a maximum period of 1 year.[4] The objective of the current study was to assess the long-term outcome after NB-UVB phototherapy in childhood vitiligo. The study was exempted from review by the ethics committee of our hospital (#W16_122#16.140). We attempted to retrieve the medical files and last known addresses of all 51 patients of our previous study. All patients who participated in the previous study and from whom a last

Table 1 Descriptive data of the respondents

	All patients	Treatment	No treatment
Demographics			
Patients, n (%)	18	14 (78)	4 (22)
Male, n (%)	5 (28)	3 (21)	2 (50)
Age (years), median (IQR)	32 (29–33)	31 (29–33)	32 (30–33)
Fitzpatrick skin type, n (%)			
II	5 (28)	3 (21)	2 (50)
III	7 (39)	5 (36)	2 (50)
IV	1 (6)	1 (7)	0
V	5 (28)	5 (36)	0
Vitiligo-specific data			
Age at onset (years), median (IQR)	6 (4–9)	6 (4–9)	6 (2–10)
Age during previous study (years), median (IQR)	12 (9–13)	11 (9–13)	12 (10–14)
Duration in years (Δ onset − first NB-UVB), median (IQR)	3·5 (1·0–9·5)	3·5 (2·5–7·5)	6·0 (0·3–11·8)
Localization before first NB-UVB, n (%)			
Head and neck	12 (67)	9 (64)	3 (75)
Trunk	11 (61)	8 (57)	3 (75)
Limbs	15 (83)	11 (79)	4 (100)
Groin	10 (56)	7 (50)	3 (75)
Activity in the past year, n (%)	8 (44)	7 (50)	1 (25)
Koebnerization, n (%)	6 (33)	6 (43)	0
Positive family history of vitiligo, n (%)	5 (28)	5 (36)	0
Affected body surface area (%, measured with SA-VES), median (IQR)	2·7 (0·6–9·4)	5·3 (0·8–14·4)	0·6 (0·1–0·6)
Quality of life: DLQI, median (IQR)	1·0 (0·0–7·0)	2·0 (2·0–7·5)	0·0 (0·0–1·5)
Occurrence of NMSC or MSC, n (%)	0	0	0
Treatment, n (%)			
NB-UVB	11 (61)	11 (79)	–
PUVA	1 (6)	1 (7)	–
Topical treatment	6 (33)	6 (43)	–

IQR, interquartile range; SA-VES, Self-Assessment of Vitiligo Extent Score; DLQI, Dermatology Life Quality Index (scale 0–30); NMSC, nonmelanoma skin cancer; MSC, melanoma skin cancer; NB-UVB, narrowband ultraviolet B phototherapy; PUVA, psoralen combined with ultraviolet A phototherapy.

known address was available received a questionnaire. Data were collected using a study-specific questionnaire comprised of questions concerning demographics, vitiligo-specific data, occurrence of melanoma or nonmelanoma skin cancer and quality of life. Current affected body surface area was measured using the Self-Assessment of Vitiligo Extent Score.[6] Descriptive statistics were used to summarize the responses.

Of the 51 patients who participated in the previous study, 36 received the questionnaire, 14 were not reachable due to unknown correct addresses and one patient was deceased due to a nondermatological cause. In total 18 patients returned a completed questionnaire, resulting in a response rate of 50%. The reason for nonresponse was unknown in all nonresponders. The median follow-up duration was 20 years and the median current age 32 years. Descriptive data are presented in Table 1. Compared with our previous study, more female (72% vs. 61%) and fair-skinned patients (67% vs. 51%) responded.[4] The current affected body surface area (mean 7·6%, median 2·7%) was lower than before inclusion in the first study (mean 15·9%).

Four patients received no additional treatment during follow-up. The other 14 patients were treated after the previous study with NB-UVB (n = 11, median duration 24 months), psoralen combined with UVA phototherapy (n = 1, median duration 24 months) and topical treatment (n = 6). Patients treated with additional NB-UVB or topical treatment were satisfied with the repigmentation results in 36% and 33% of cases, respectively.

To our knowledge, this is the first long-term follow-up study after NB-UVB phototherapy in childhood vitiligo. We collected data from 18 children with early-onset vitiligo who were treated 20 years ago with NB-UVB phototherapy. Hypothetically, treatment of vitiligo in the early phase of the disease could potentially lead to modification of underlying disease processes, which is the case in other autoimmune disorders such as rheumatoid arthritis. This hypothesis is supported by clinical data in which patients with recent onset of vitiligo achieved significantly higher repigmentation than patients with long-standing vitiligo after NB-UVB.[7]

In our study, only a small percentage of patients (22%) did not receive any additional treatment after the first study. Patients who received treatment after the first study showed a larger affected body surface area (median 5·3%) than patients who received no additional treatment (median 0·6%). This may suggest that in 22% of cases, the vitiligo was not reactivated or only slowly progressed after the first NB-UVB phototherapy treatment. However, the median duration between onset of vitiligo and first treatment with NB-UVB was longer in the group without additional treatment. This suggests that other factors may also influence the disease process of vitiligo.

The European guidelines on vitiligo state that prolonged maintenance with NB-UVB treatment is not recommended, because there is a potential risk of skin photodamage due to the higher susceptibility of vitiligo skin to sunburn.[8] None of the patients reported occurrence of either melanoma or nonmelanoma skin cancer. However, we cannot draw conclusions concerning the safety of NB-UVB phototherapy in childhood vitiligo. On the other hand, a recent study has shown that patients with vitiligo, even those who received phototherapy, have a lower risk of developing melanoma and nonmelanoma skin cancer compared with healthy controls.[9]

Limitations of this study are the small population size, the retrospective uncontrolled design and the low response rate. Our data suggest that NB-UVB phototherapy may be a safe and effective treatment option in childhood vitiligo, which in some cases may change the natural course of the disease. However, more long-term observational and controlled studies are needed to address these important issues.

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Conflicts of interest: none declared.