Full study protocol and Statistical analysis plan

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Study protocol: Adult patients aged ≥ 19 years with stable, non-segmental vitiligo symmetrically distributed over the face are enrolled. The stable vitiligo is defined as follows: the absence of progression for at least 6 months prior to enrollment, and the absence of Koebner's phenomenon, trichromic lesion, or confetti-like depigmentation. The exclusion criteria are pregnancy, sensitive skin, or photosensitivity. Each side of the face will be randomly assigned to receive the topical tretinoin 0.05% (w/v) cream (tretinoin group) or moisturizer (control group) every night during the period of NBUVB phototherapy, which will be performed on the entire face twice weekly for 12 weeks. The initial dose is 100 mJ/cm^2 and is increased by 50 mJ/cm^2 at each subsequent session until a pink erythema that does not persist for ≥24 h appear. Patients who complained of erythema or irritation are instructed to mix topical tretinoin with moisturizer in proportions to relieved their complaints.

The primary outcome is the degree of hyperpigmentation (the change in the L*value [delta L*]) of the darkest spots on either side of the face, using a spectrophotometer at baseline and every month thereafter. The secondary outcome is the treatment response to phototherapy assessed by deriving the VESTA by reference value based on clinical photographs obtained at baseline and every month thereafter. All adverse events are recorded at each visit.

Statistical analysis plan: The paired t-test will be used to compare the delta L*values of the two groups. The treatment response proportions will be compared using the McNemar test. All statistical analyses will be performed using R ver. 3.6.1 software (R Foundation for Statistical Computing, Vienna, Austria).