

JOURNAL OF CLINICAL  
DERMATOLOGY

ISSN 1000-4963

CN 32-1202/R

CODEN LPZAEH

# 临床皮肤科杂志

LINCHUANG PIFUKE ZAZHI

2012年 第41卷 第4期

Vol.41 No. 4 2012

主办单位：江苏省人民医院  
(南京医科大学第一附属医院)

4  
2012

(月刊)

ISSN 1000-4963



9 771000 496018



# Clinical Observation of 308nm Excimer Light in the Treatment of Stable Vitiligo

Zhang Yong, Wu Jianhua and Gu Jun

(Department of Dermatology, Changhai Hospital, Second Military Medical University, Shanghai 200433)

[Keywords:] Vitiligo; 308nm excimer light

[Classification number of Chinese map ]R758.41

[Document identification code ] B

[Article No. ]1000-4963(2012)04-0250-02

308nm excimer light belongs to the category of ultraviolet B. Since it was used to treat vitiligo in 2003, after several years of clinical verification, it has been found that it has the characteristics of definite curative effect, quick response, short course of treatment and few adverse reactions. From April to October, 2009, 30 patients with vitiligo in stable stage were treated with GP908, 308nm excimer light skin therapeutic instrument [Yue Shi Yao Jian Xie (Zhun) Zi 2010 No.2260514] produced by Shenzhen Gsd Tech. Co., Ltd., in order to verify the clinical efficacy and safety of this therapeutic instrument in treating vitiligo.

heart, liver and kidney insufficiency; Low immune function and long-term use of immunosuppressants or systemic failure; Have a history of phenylketonuria, arsenic exposure and radiotherapy; Children under 12 years old, patients with eye diseases, people with a history of skin cancer, and those who have been exposed to carcinogens; Received various vitiligo treatments within 1 month; I have received similar phototherapy within six months; Suffering from mental illness and failing to cooperate well; Other patients considered unsuitable by researchers.

## 1 Objects and Methods

### 1.1 Object of Study

1.1.1 Case inclusion criteria According to the diagnostic criteria of vitiligo formulated by the Pigmentology Group of the Skin STD Professional Committee of the Chinese Society of Integrated Traditional Chinese and Western Medicine, patients diagnosed with vitiligo are definitely not limited to men and women; Age 18 ~ 65 years old; The skin lesions were stable and did not expand within 3 months. Volunteer to participate in the trial and sign the informed consent form.

1.1.2 Exclusion criteria Infection, photosensitivity and skin cancer in the lesion site; Pregnant and lactating women; Serious

1.1.3 General data A total of 30 patients were enrolled, of which 1 was lost and 29 patients completed treatment. There were 11 males and 18 females. The age ranged from 18 to 63 years, with an average age of 39.07 years. Distribution of skin lesions: 14 cases of head and face, 10 cases of trunk (Figure 1A), 5 cases of limbs; The course of disease ranged from 0.5 to 30 years with an average of 4.03 years.

### 1.2 Method

1.2.1 Treatment method: Select the treatment cases according to the requirements, collect the medical history, sign the informed consent form, and take photos of the skin lesions. The first dose was 71mJ/cm<sup>2</sup> for 2s, and then the dose was increased according to the skin lesion reaction of patients, and the treatment time was increased for 2s each time. Close the treatment head to the lesion area to protect the normal skin all around. Treatment was

performed once every two or three days, with a total of 20 treatments. The untreated site was used as a blank control.

1.2.2 The area of pigment recovery lesions was determined by grid method. After treatment, the curative effect was analyzed, and the subjective evaluation of patients and operators and the objective measurement of skin lesion area were comprehensively evaluated: After recovery, all the white spots disappeared and returned to normal skin color; The obvious effect was that the white spot partially subsided, and the area of skin color restored to normal accounted for 50% ~ 99% of the skin lesion area; Effectively, the white spot partially subsided, and the area of skin color recovered to normal accounted for < 50% of the skin lesion area. Invalid for white spot without pigment regeneration or range expansion. Effective rate = (cured cases + markedly effective cases)/total cases × 100%.

### 1.3 statistical Method

Paired  $\chi^2$  test was used for data,  $\alpha = 0.05$ .

## 2 Results

### 2.1 Clinical Efficacy

29 patients completed the treatment, and the treatment results are shown in Table 1. The results showed that the effective rate was 48.3%, and the effective rate of face, neck and trunk reached 53.3% at the 20th treatment (Figure 1B).

### 2.2 Adverse Reaction

Mild erythema and desquamation appeared in many patients at the initial stage of irradiation, and some patients had itching. The above symptoms disappeared after several treatments, and the patients had no discomfort.

A: Before treatment, the left chest was depigmented;



B: The pigment recovered after treatment.



Fig. 1 Skin lesions of stable vitiligo patients before and after 308nm excimer light treatment

Table 1 Observation on the therapeutic effect of 308nm excimer ultraviolet skin therapeutic instrument on vitiligo skin lesions in different parts (Example)

Parts	Group	Number of cases	Treatment times (times)	Heal	Significant effect	Active	Invalid	Effective rate (%)
Face and neck	Treatment group	14	20	1	5	7	1	42.9
	Control group	14	0	0	0	1	13	0
Trunk part	Treatment group	10	20	0	5	4	1	50.0
	Control group	10	0	0	0	0	10	0
Limbs	Treatment group	5	17	0	2	1	1	60.0
	Control group	5	0	1	0	0	5	0
Total								48.3

Two patients developed moderate erythema and blisters after increasing the dose in the middle of treatment. After stopping treatment twice, the blisters dried up and scabbed, and no adverse reactions occurred after continuing treatment. No other adverse events and serious adverse reactions occurred in all patients during the treatment.

### 3 Discussion

Vitiligo is a common skin and mucous membrane depigmentation disease, and its incidence has been increasing in recent years. Its etiology and pathogenesis are still unclear. It is considered to be a polygenic immune-related disease, and there is no effective means to treat it. Ultraviolet rays have been used in the treatment of vitiligo and psoriasis for a long time. In recent years, ultraviolet B (UVB), especially 311nmUVB, has been widely used in clinical treatment of vitiligo for its better efficacy and less adverse reactions. 308nm excimer light belongs to the category of ultraviolet B. Since it was used to treat vitiligo in 2003<sup>[1]</sup>, after several years of clinical verification, it was found that it has the characteristics of definite curative effect, quick response, short course of treatment and few adverse reactions<sup>[2]</sup>. 308nm excimer light is being accepted by dermatologists and many patients for its better curative effect and less adverse reactions. At present, many similar devices have been used in clinic abroad.

Our research results show that: 308nm excimer ultraviolet skin therapeutic instrument has a good therapeutic effect on stable vitiligo skin lesions. XeCl excimer light is produced, and its wavelength is constant, which belongs to the range of UVB. Compared with other UVB treatment methods (such as narrow-wave UVB), it has the advantages of wide use, short treatment time, quick curative effect and few adverse reactions. Its mechanism may be to promote the

differentiation and maturation of melanocytes by inducing keratinocytes in skin lesions to secrete related cytokines<sup>[3]</sup> and induce apoptosis of lymphocytes locally infiltrated in skin lesions.

All the patients in this study are Chinese, with skin type III-IV and stable skin lesions. After 20 treatments, the effective rate is 48.3%. Compared with Claire Kuo et al.<sup>[4]</sup>, using the 308nm excimer light therapeutic apparatus produced by DEKA Company in Italy, the effect of treating skin lesions of stable vitiligo patients for 24 times is similar. During the course of treatment, 2 patients developed blisters, and many patients developed desquamation and mild itching at the early stage of treatment, which all recovered by themselves without special treatment.

### References

- [1] Taneja A, Trehan M, Taylor CR. 308 nm excimer laser for the treatment of localized vitiligo [J]. *Int J Dermatol*, 2003, 42(8):658-662.
- [2] Mavilia L, Mori M, Rossi R, et al. 308 nm monochromatic excimer light in dermatology: personal experience and review of the literature. *G Ital Dermatol Venereol*, 2008, 143(5): 329-337.
- [3] Zhang Yong, Xiang Leihong, jian li, et al. Effects of 308nm excimer light on apoptosis, cell cycle and SCF expression of human keratinocytes [J]. *Chinese Journal of Dermatology*, 2007, 40 (6): 325-327.
- [4] Guo Jing, Xiang Leihong, Zheng Zhizhong, et al., Clinical study on the treatment of vitiligo with single-frequency excimer light, *Chinese Journal of Dermatology*, 2006, 39 (1): 32-34.
- [5] Bianchi B, Campolmi P, Mavilia L, et al. Monochromatic excimer light(308 nm): an immunohistochemical study of cutaneous T cells and apoptosis related molecules in psoriasis [J]. *J Eur Acad Dermatol Venereo1*, 2003, 17(4): 408-413.