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LETTERS TO THE EDITOR

Facial rejuvenation: A safe and effective treatment with a fractional non-ablative 675 nm laser in Asian population

To the Editor,

There is a higher incidence of pigment changes than the appearance of wrinkles in the skin of the Asian population. Ablative laser resurfacing, especially for Asians, can harm strongly the epidermis and is associated with potential adverse effects.[1]

It is already known from the literature that 675 nm laser source system may be considered an effective and safe tool to treat signs of skin aging such as wrinkles with a low risk of side effects, simple post-treatment management and a reduction in the onset of post-inflammatory hyperpigmentation (PIH).[2,3]

These results were then also corroborated by histological findings of human skin biopsies, which demonstrate that 675-nm laser is able to induce collagen remodeling, with a prominent increase in thin and new collagen fibers.[4]

Main advantages of this device are a significant reduction in postoperative downtime compared to CO_2/erbium lasers, and its use in darker skin patient types, thanks to its ability, unlike ablative lasers, to not induce the phenomenon of hyperpigmentation.[2] This new 675 nm wavelength device acts directly on the collagen component and selectively targets dermal collagen (unlike laser systems that use wavelengths below 650 nm which are highly absorbed by hemoglobin and the ones over 950 nm which are mainly absorbed by water): The mechanism is based on the heat transfer directly to the collagen fibers without interfering with other chromophores. The energy supplied to the collagen is able to induce its regeneration, thus favoring the production of dermal collagen and the straightening of the elastic fibers. This new laser device has also been proposed for the treatment of other collagen-rich lesions, such as acne scars, with very encouraging results.[5]

Furthermore, thanks to its high affinity for melanin, with a minimal interaction with vascular component, this device has been also proposed for pigmented disorders treatment such as Melasma.[6]

In this study, we assessed the clinical effectiveness and safety of this new 675 nm fractional laser (RedTouch, DEKA) for treating photoaging facial wrinkles and acne scarring in Asians.

For this study, 13 patients were evaluated (3 men and 10 women from 45 to 68 years, with a mean age of 56.5 years) with phototype III (31%) and IV (69%) who presented signs of skin aging (wrinkles) and acne scars. Patients underwent 3 sessions with the

TABLE 1 Treatment list of the 13 patients evaluated in this study

ID	M/F	Area	Treatment	Age	Phototype	Score before	Score 3 months FU	Pain VAS	Number of treatments	Side effect
1	M	Face	Acne scar	45	4	9	3	2	3	None
2	F	Face	Acne scar	35	3	2	1	1	3	Some micro burns
3	F	Face	Acne scar	38	4	4	2	1	3	None
4	M	Face	Acne scar	35	4	2	2	1	3	None
5	M	Face	Acne scar	42	4	4	2	1	3	None
6	F	Face	Acne scar	35	3	2	1	1	3	None
7	F	Face	Acne scar	36	4	4	2	1	3	None
8	F	Face	Acne scar	33	4	9	6	2	3	None
9	F	Face	Wrinkle	68	3	7	6	2	3	None
10	F	Face	Wrinkle	54	3	6	3	1	3	None
11	F	Face	Wrinkle	60	4	7	5	1	3	Some micro burns
12	F	Face	Wrinkle	60	4	6	4	1	3	None
13	F	Face	Wrinkle	58	4	4	3	1	3	None
Goodman and Baron's Quantitative Global Acne Scarring Grading System (GBQGASGS)										
Fitzpatrick Elastosis and Wrinkles scale (FEWS)										

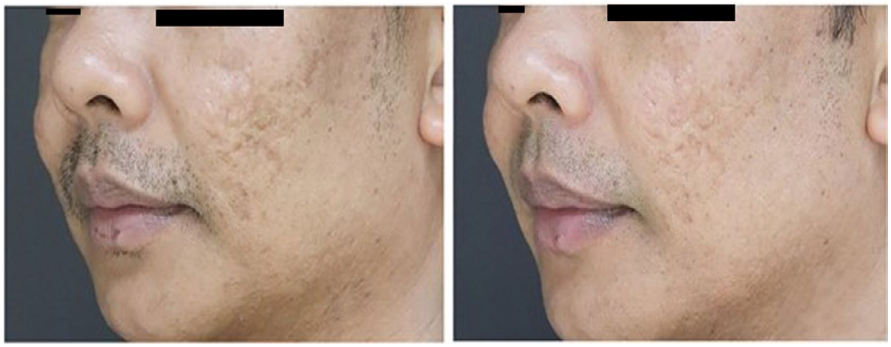

FIGURE 1 A marked reduction of facial wrinkles and acne scars is shown in lateral view of the patient 3 months after the last treatment

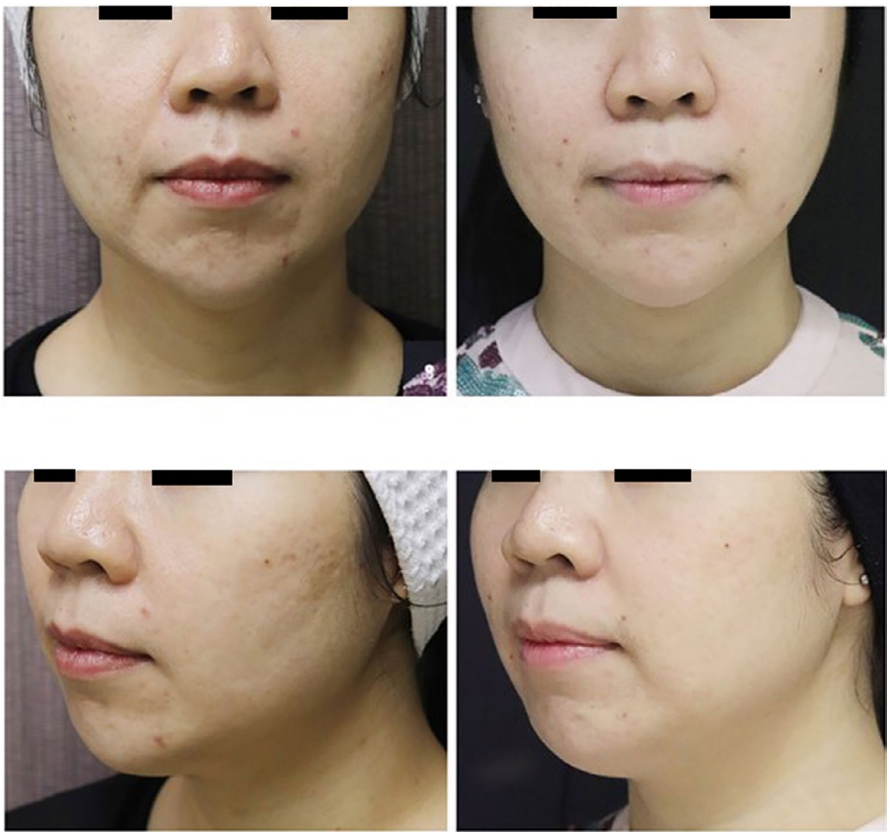

FIGURE 2 A marked reduction of facial wrinkles and acne scars is shown in both frontal (upper panel) and lateral (lower panel) view of the patient 3 months after the last treatment

TABLE 2 Mean scores statistic of FWES and GBQGASGS before and 3 months after the last treatment with RedTouch system

Scores	Patients	Before	3 months follow-up	Significance
Goodman and Baron's Quantitative Global Acne Scarring Grading System	8	4.5 ± 0.4	2.4 ± 1.6	$p < 0.01$
Fitzpatrick Wrinkle and Elastosis Scale	5	6 ± 1.2	4.2 ± 1.3	$p < 0.01$

RedTouch System once monthly (Power: 5 W, Dwell time: 100–125 ms, spacing: 2.5–1.5 mm, cooling: 5°C, 1 pass). The depth reached during device emission was 400 μm. Topical anesthesia was applied throughout the treatment cycle in only 10% of cases (Table 1).

For wrinkle, texture, and pigmented disorders, the efficacy of treatment was evaluated using the 9 points Fitzpatrick Elastosis and Wrinkles Scale (FEWS). For acne scars, the efficacy of treatment was evaluated by modified 9 points Goodman and Baron's Quantitative Global Acne Scarring Grading System (GBQGASGS). Treatment tolerance was assessed using the 5-point Visual Analogue Pain Scale (VAS). Esthetic results were assessed by digital photographs. Paired Student's *t* test and SPSS software ver. 25.0 (IBM, Aemonk, BNY) were used for statistic.

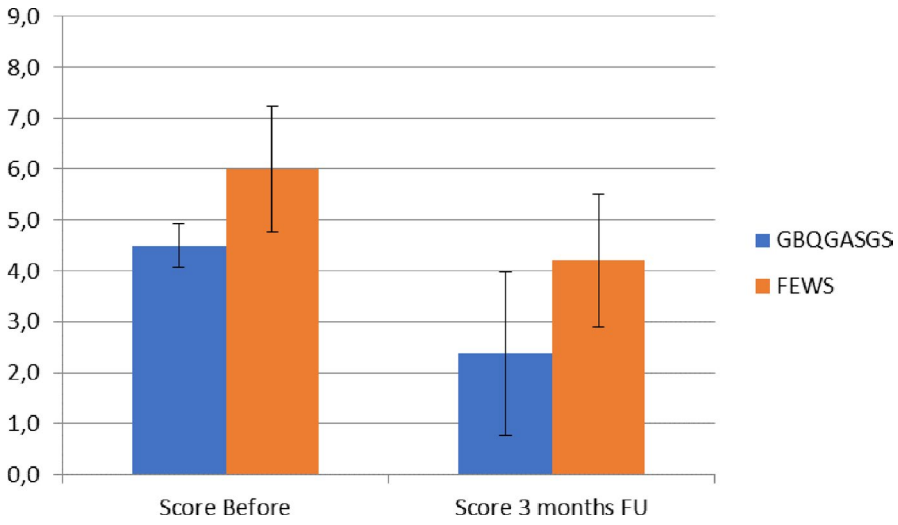

FIGURE 3 FEWS / GBQGASGS score histograms before treatment and 3 months FU

Photographic evaluation (Figures 1 and 2) shown relevant improvement on both wrinkles and scared skin. We observed a significant decrease of the GBQGASGS scores (4.5 ± 0.4 *vs* 2.4 ± 1.6; $p < 0.01$) and FWES scores (6 ± 1.2 *vs* 4.2 ± 1.3; $p<0.01$) at 3 months after the last treatment (Table 2 and Figure 3). The treatment was well-tolerated (wrinkles average pain score: 1.2 ± 0.4; acne scar average pain score: 1.3 ± 0.5). No severe side effect has been recorded .

RedTouch laser provides safe and effective treatment option for darker skin phototypes without the risks of PIH and thermal diffusion to surrounding tissues that other emission modes can produce.

KEYWORDS

Asian skin, facial rejuvenation, non-ablative 675 nm laser

CONFLICT OF INTEREST

None.

AUTHOR CONTRIBUTIONS

R.L, P.B, and A.V performed the research and contributed substantially to the study design, interpretation, and data acquisition/analysis; I.F and L.P contributed to the manuscript writing. All authors were involved in the drafting and revision of the manuscript and given final approval of the version to be published. Each author has agreed to be responsible for all aspects of the job to ensure that issues relating to the accuracy or integrity of any part of the job are properly investigated and resolved.

ETHICAL APPROVAL

The techniques performed in this study involving humans were in accordance with the ethical standards of the institutional and/or national research committee and the Helsinki Declaration of 1975.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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