

USING A 4% HYDROQUINONE/TRETINOIN-BASED SKIN CARE SYSTEM IN CONJUNCTION WITH FACIAL REJUVENATION PROCEDURES

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INTRODUCTION

For more than 15 years, patients have successfully used a 4% hydroquinone/tretinoin-based skin care system to help correct prematurely photoaged skin and prevent future skin damage.^{1,2} And, in 2006, the first hydroquinone/tretinoin-based skin care system specifically designed to be used in conjunction with a variety of surgical and non-surgical facial rejuvenation procedures became available to physicians.² Designed to condition the skin pre-procedure, and/or enhance the quality of the skin post-procedure, this system aims to enhance both clinical outcomes and patient satisfaction.

The new system includes several products (including cleanser, toner, 4% hydroquinone, exfoliant, tretinoin, and sunscreen SPF 35) whose order and frequency of application are carefully defined to create a 4-step process for improving and restoring overall skin quality. The first step is skin preparation (using cleanser and toner), the second step is skin correction (using hydroquinone and the exfoliant), the third step is skin stimulation (using tretinoin), and the fourth step is skin protection (using sunscreen). Moisturizer can also be used as needed to soothe areas of dry or flaky skin.

A large-scale experience trial has been conducted to quantify the improvement in skin quality associated with using this system adjunctively with other facial rejuvenation procedures, both non-surgical/non-ablative and surgical/ablative.

METHODS

Study design

- Questionnaire administered prospectively to investigators allowing them to evaluate clinical outcomes in patients being treated with the hydroquinone/tretinoin skin care system in conjunction with other facial rejuvenation procedures.

Inclusion criteria

- Patients from practices dispensing Obagi products (up to 24 patients per practice).
- Patients who would be using the hydroquinone/tretinoin system and would also receive an additional facial rejuvenation procedure, such as:
 - Botulinum toxin type A injections
 - Laser therapy
 - Microdermabrasion
 - Chemical peels (superficial or deep)
 - Surgery
 - Filler injections.

Intervention

- For each patient enrolled, investigators completed a 1-page questionnaire that evaluated various parameters of skin quality before and after using the hydroquinone/tretinoin system in conjunction with a facial rejuvenation procedure.

Outcome measures

- Skin quality was assessed by the investigators in terms of hyperpigmentation, tactile roughness, sallowness, periorcular fine wrinkles, perioral fine wrinkles, and erythema using a scale of:
 - 0 = none
 - 1 = mild/barely noticeable
 - 2 = moderate/easily visible
 - 3 = severe/prominent.

- Investigators assessed the overall improvement in skin quality using a scale of:
 - 3 = Excellent
 - 2 = Good
 - 1 = Fair
 - 0 = Poor.

Subgroup analysis

- A subgroup analysis was performed on the subset of patients who met all the following criteria:
 - Used the hydroquinone/tretinoin system for both pre-procedure and post-procedure conditioning
 - Only one additional facial rejuvenation procedure used in addition to the hydroquinone/tretinoin system
 - Noticeable clinical improvement observed.

RESULTS

Patients

- Data from 2,697 patients were evaluated between January and May 2006.
- Predominantly:
 - Female (95%)
 - 36-65 years of age (76%)
 - Fitzpatrick skin types II-IV (89%).
- 52% had non-ablative/non-surgical procedures and 46% had ablative/surgical procedures.
- Mean duration of use of the hydroquinone/tretinoin system:
 - 4 weeks for pre-conditioning
 - 6 weeks for post-conditioning.
- Results from 1,106 patients were evaluable for the subanalysis.

Efficacy

- The proportion of patients who achieved at least a 1-grade improvement (eg, from moderate to mild, or mild to none) (Figure 1) was up to:
 - 84% for hyperpigmentation
 - 83% for tactile roughness
 - 77% for sallowness
 - 64% for periorcular fine wrinkles
 - 57% for perioral fine wrinkles
 - 31% for erythema.
- The proportion of patients with this level of improvement was similar regardless of whether the procedures were ablative/surgical or non-ablative/non-surgical (Figure 1).
- The proportion of patients who achieved at least a 2-grade improvement (eg, from severe to mild, or moderate to none) (Figure 2) was up to:
 - 40% for hyperpigmentation
 - 42% for tactile roughness
 - 35% for sallowness
 - 18% for periorcular fine wrinkles
 - 15% for perioral fine wrinkles
 - 6% for erythema.

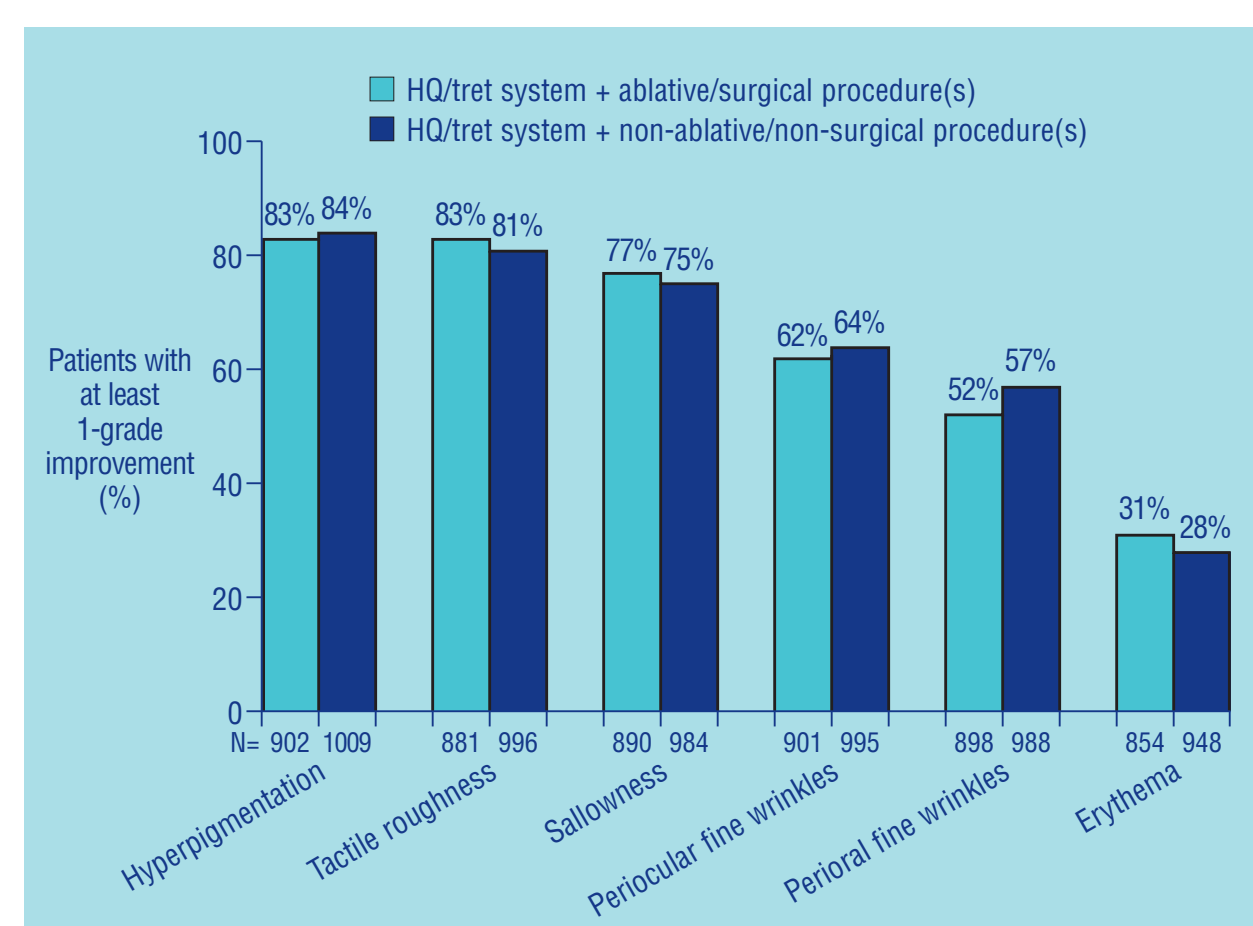


Figure 1. Incidence of at least 1-grade improvement from baseline in various assessments of skin quality after treatment with the hydroquinone/tretinoin system plus ablative/surgical or non-ablative/non-surgical procedure(s).

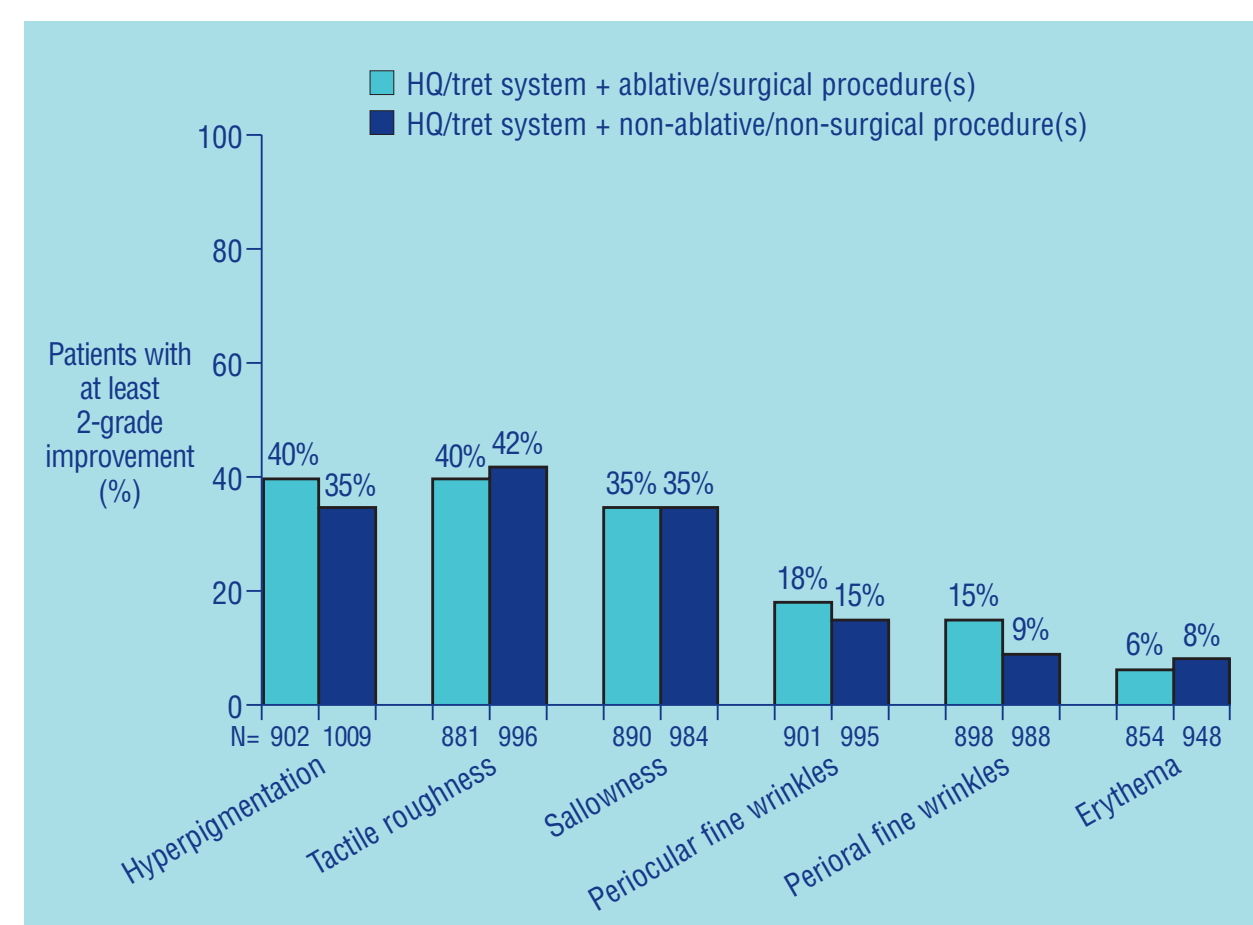


Figure 2. Incidence of at least 2-grade improvement from baseline in various assessments of skin quality after treatment with the hydroquinone/tretinoin system plus ablative/surgical or non-ablative/non-surgical procedure(s).

- Again, the proportion of patients with this level of improvement was similar regardless of the type of procedure (Figure 2).
- Among patients who were treated with the hydroquinone/tretinoin system plus botulinum toxin type A, the proportion achieving at least a 1-grade improvement (Figure 3) was:
 - 83% for hyperpigmentation
 - 82% for tactile roughness
 - 80% for sallowness
 - 82% for periorcular fine wrinkles
 - 65% for perioral fine wrinkles
 - 18% for erythema.
- The proportion of patients treated with the hydroquinone/tretinoin system plus botulinum toxin type A who achieved at least a 2-grade improvement (Figure 4) was:
 - 33% for hyperpigmentation
 - 34% for tactile roughness
 - 27% for sallowness
 - 30% for periorcular fine wrinkles
 - 15% for perioral fine wrinkles
 - 3% for erythema.
- The proportion of patients treated with the hydroquinone/tretinoin system plus botulinum toxin type A who achieved at least a 2-grade improvement (Figure 4) was:
 - 33% for hyperpigmentation
 - 34% for tactile roughness
 - 27% for sallowness

- 30% for periorcular fine wrinkles
- 15% for perioral fine wrinkles
- 3% for erythema.
- Analysis of the subgroup (defined in the Methods section) showed that:
 - 31%–36% of patients achieved a good or excellent overall improvement in skin quality after pre-conditioning with the hydroquinone/tretinoin system alone (i.e. before any other facial rejuvenation procedure was administered) (Figures 5 and 6)
 - 78% of patients who were treated with a non-ablative/non-surgical procedure in addition to the hydroquinone/tretinoin system achieved a good or excellent overall improvement in skin quality (Figure 5)
 - 80% of patients who were treated with an ablative/surgical procedure in addition to the hydroquinone/tretinoin system achieved a good or excellent overall improvement in skin quality (Figure 6).
- A good or excellent improvement in overall skin quality (Table 1) was achieved in at least 80% of patients treated with the

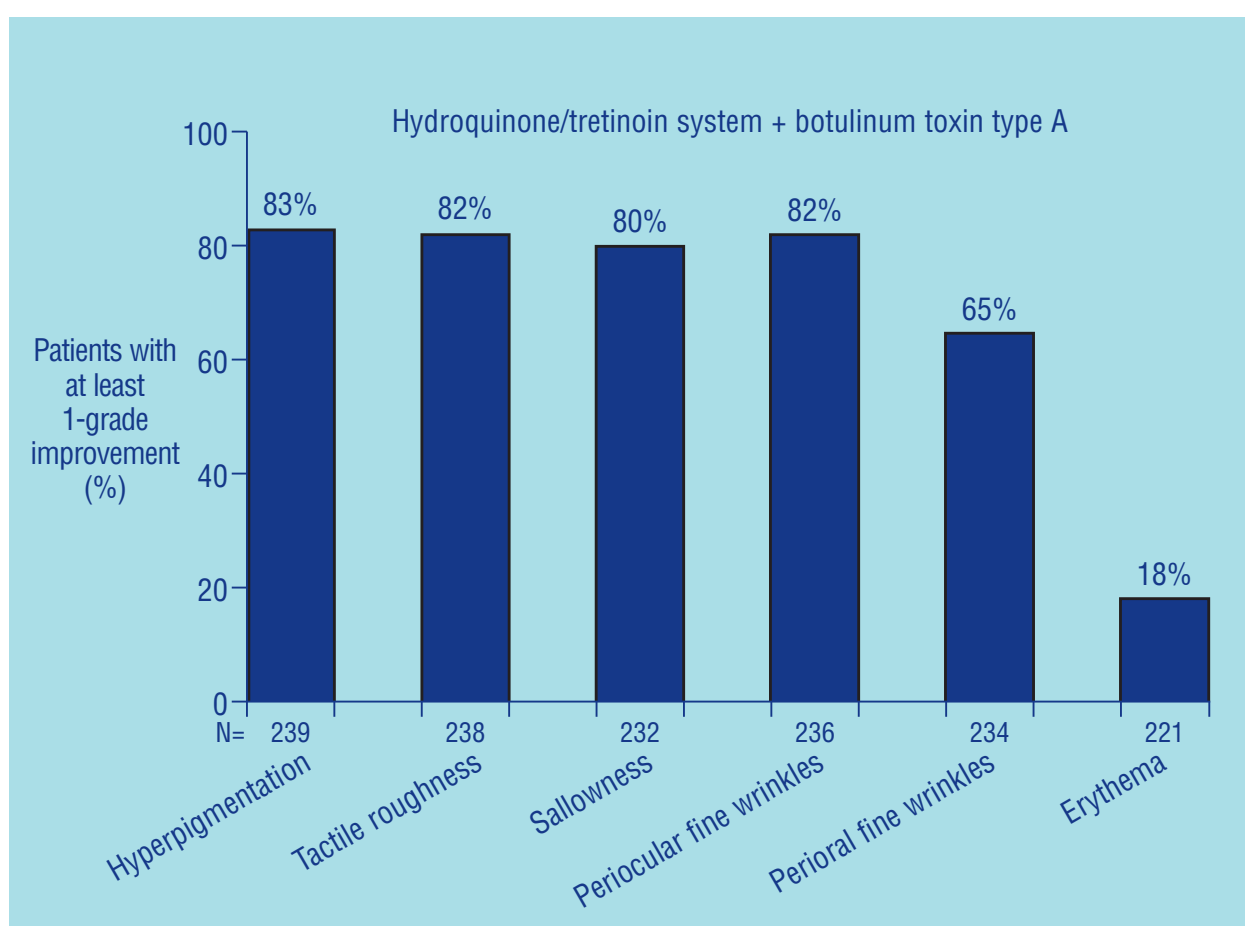


Figure 3. Incidence of at least 1-grade improvement from baseline in various assessments of skin quality after treatment with the hydroquinone/tretinoin system plus botulinum toxin type A.

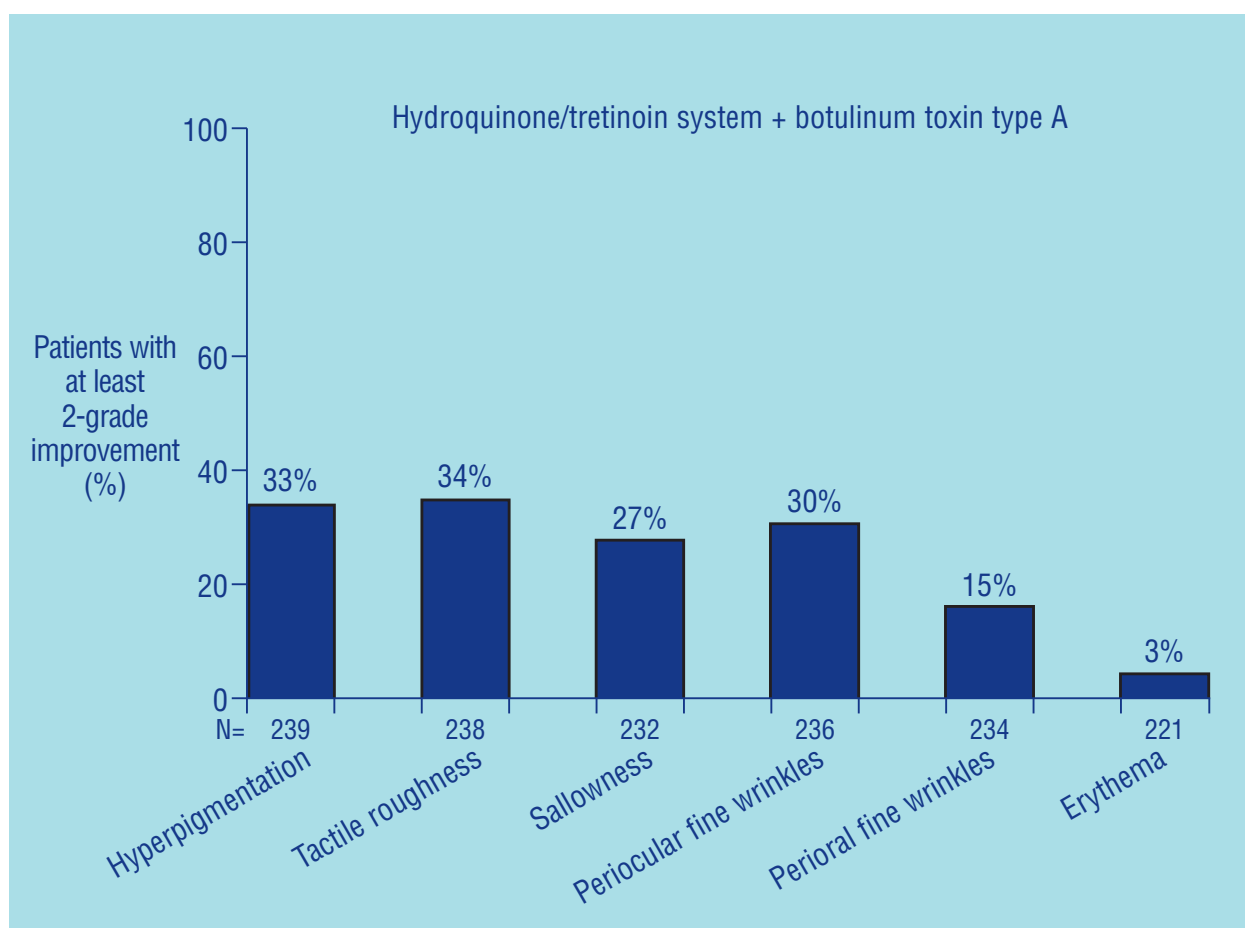


Figure 4. Incidence of at least 2-grade improvement from baseline in various assessments of skin quality after treatment with the hydroquinone/tretinoin system plus botulinum toxin type A.

hydroquinone/tretinoin system plus:

- Botulinum toxin type A
- Intense pulsed light therapy
- Non-ablative laser therapy
- Ablative chemical peel (including trichloroacetic acid or blue peel)
- Surgery.
- A good or excellent improvement in overall skin quality (Table 1) was achieved in at least 70% of patients treated with the hydroquinone/tretinoin system plus:
 - Non-ablative chemical peel
 - Microdermabrasion
 - Ablative laser therapy
 - Laser resurfacing.

Procedure used with hydroquinone/tretinoin system	N	Patients (%)					
		After pre-conditioning alone			After pre-conditioning, and procedure, and post-conditioning		
		Good improvement	Excellent improvement	Good or excellent improvement	Good improvement	Excellent improvement	Good or excellent improvement
Non-ablative/non-surgical							
Botulinum toxin type A	73	22	1	23	48	32	80
Intense pulsed light	78	31	3	34	51	38	89
Filler	19	16	0	16	32	37	69
Non-ablative laser	141	33	1	34	42	42	84
Non-ablative chemical peel	27	52	4	56	30	41	71
Microdermabrasion	229	34	7	41	38	33	71
Ablative/surgical							
Blue peel/TCA	158	30	3	33	27	58	85
Ablative chemical peel	111	36	2	38	50	33	83
Ablative laser	153	24	0	24	36	37	73
Laser resurfacing	88	24	0	24	45	33	78
Surgery	37	41	5	46	27	57	84

TABLE 1 Proportion of patients with a good or excellent improvement in overall skin quality when using the hydroquinone/tretinoin system before and after being treated with a facial rejuvenation procedure.

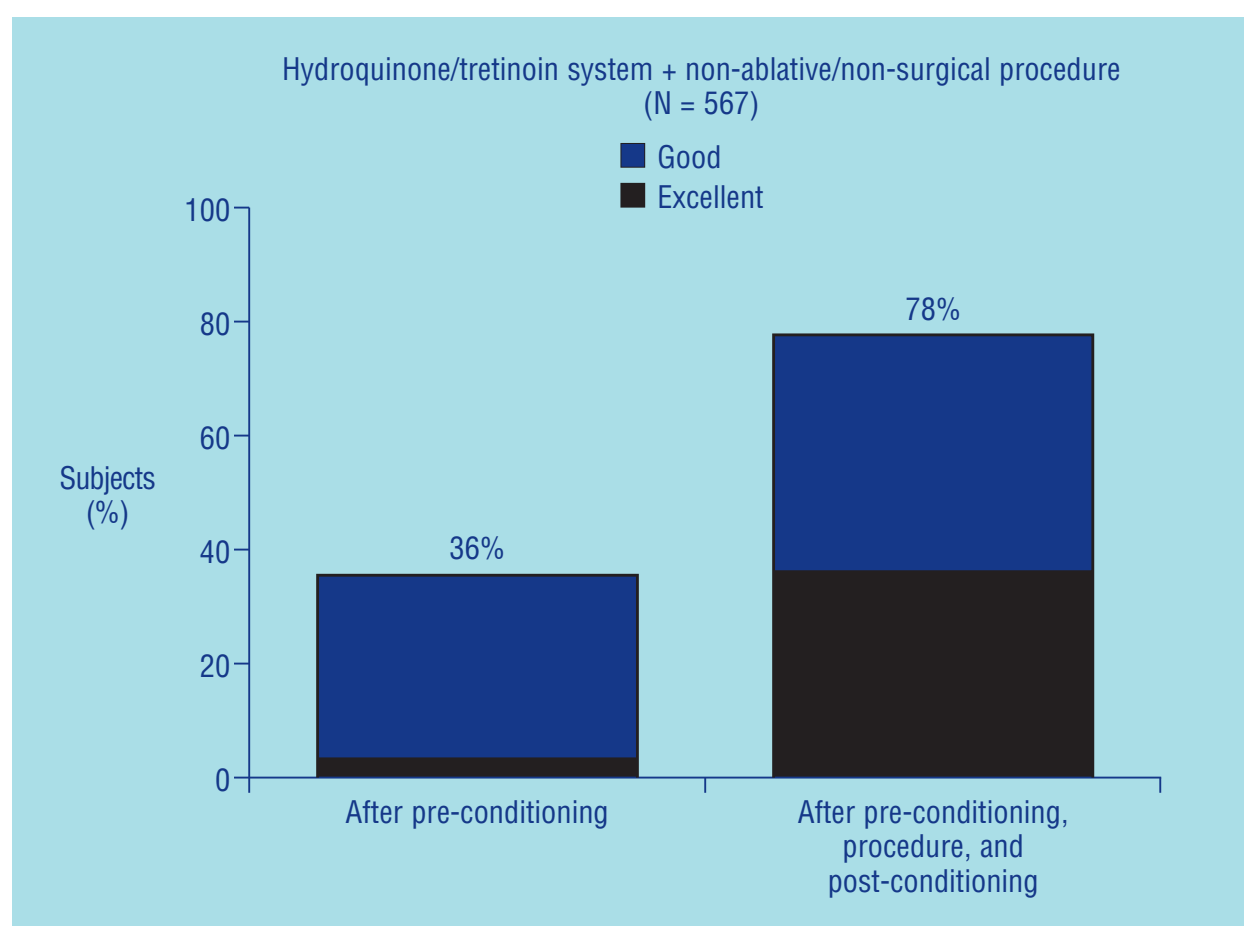


Figure 5. Incidence of patients with a good or excellent improvement in overall skin quality after being treated with the hydroquinone/tretinoin system (for both pre-conditioning and post-conditioning) and a non-ablative/non-surgical procedure.

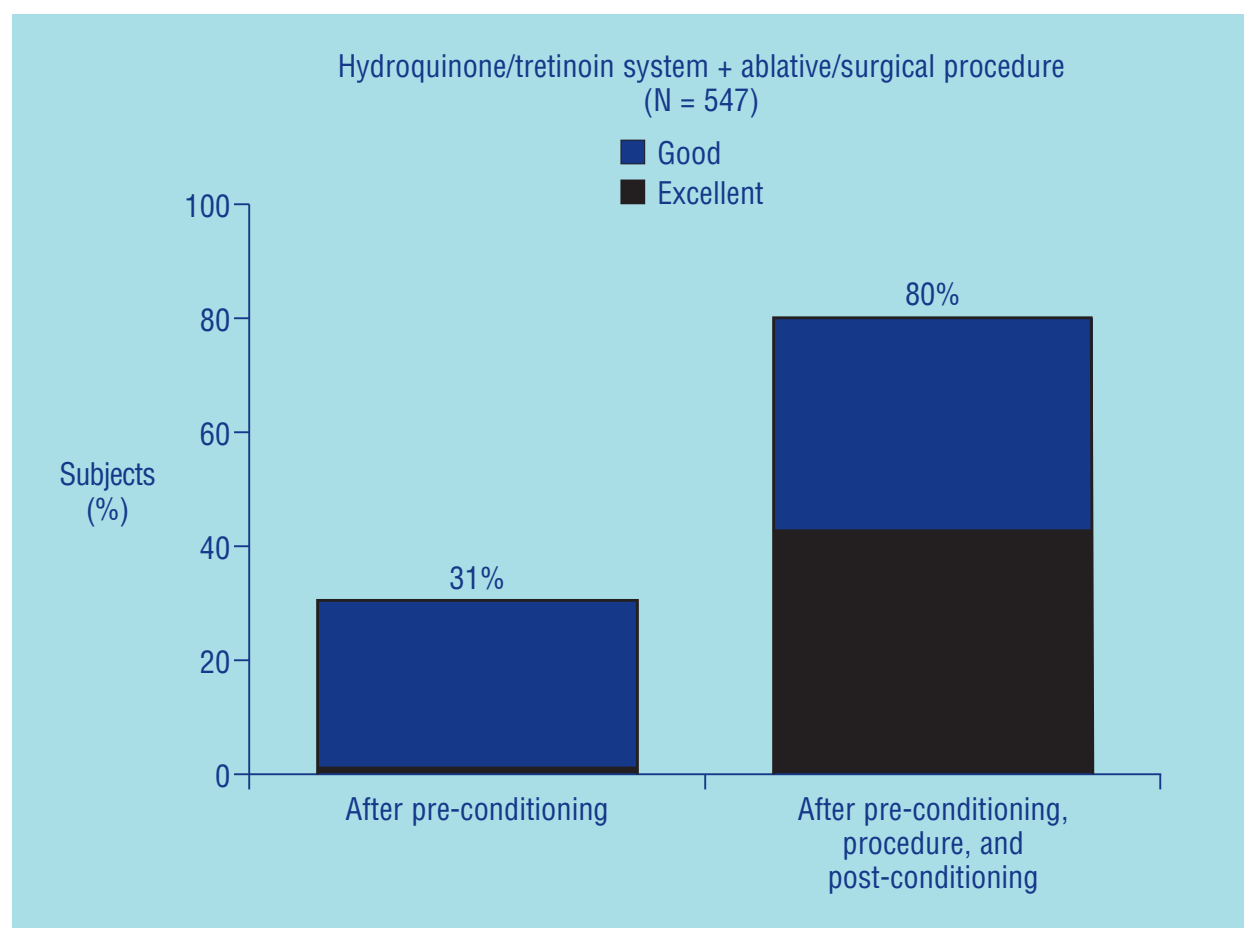


Figure 6. Incidence of patients with a good or excellent improvement in overall skin quality after being treated with the hydroquinone/tretinoin system (for both pre-conditioning and post-conditioning) and an ablative/surgical procedure.

CONCLUSIONS

The hydroquinone/tretinoin system improves overall skin quality and is an effective adjunct to both ablative/surgical and non-ablative/non-surgical facial rejuvenation procedures—helping to achieve meaningful reductions in hyperpigmentation, tactile roughness, sallowness, periorcular fine wrinkles, perioral fine wrinkles, and erythema.

As evidenced by the improvements in hyperpigmentation, tactile roughness, and sallowness when used in conjunction with botulinum toxin type A (none of which would be anticipated to be attributable to the botulinum toxin), the hydroquinone/tretinoin system helps ensure an optimal overall aesthetic improvement across multiple parameters of skin quality. Therefore, as facial rejuvenation procedures tend to improve some parameters of skin quality better than others, adjunctive use of the hydroquinone/tretinoin system helps ensure that other parameters are improved too—so maximizing the overall improvement in appearance.

REFERENCES

- Herndon JH, Stephens TJ, Sigler ML. Efficacy of a tretinoin/hydroquinone-based skin health system in the treatment of facial photodamage. *Cos Derm* 2006;19:255-62.
- Obagi Medical Products website. Obagi Medical Products launches two new systems to optimize results of non-surgical and surgical facial aesthetic procedures [press release]. Available at: <http://phx.corporate-ir.net/phoenix.zhtml?c=124836&p=irol-newsArticle&ID=1042623&highlight=>. Accessed September 11, 2007.

DISCLOSURE

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