Background: This was a prospective multi-center clinical study to evaluate the safety and efficacy of the 2,790 nm Er:YSGG laser for resurfacing in Asians.

Study: Forty Asian subjects with Fitzpatrick skin types III-V, and moderate to severe photodamage were recruited in two clinical centers. Two treatments were performed at 4-week intervals. A 2,790 nm µm laser (Pearl®, Cutera, Brisbane, CA) was used with settings of 2.0 J/cm² fluence, 0.4 ms pulse width and 20% overlap. The whole face, including eyelids and periorbital areas, was treated with one pass. Standardized photographs were taken with the Canfield VISIA CR system at baseline, and then one and three months after the second treatment. Two blinded assessors evaluated the photographs to assess the degree of improvement in fine lines, skin texture, irregular pigmentation, pigment spots, pore size and telangiectasia on a scale of 0 (no improvement) to 4 (excellent improvement). Patient satisfaction scores were also obtained. Cutometry was performed at five standard anatomical points on each visit.

Results: All subjects tolerated the procedure well using topical anesthesia. Mean erythema and desquamation times were 3.2 and 6.2 days respectively. Masked observers’ evaluation documented statistically significant improvement in terms of fine lines, irregular pigmentation, pigment spots and telangiectasia (p<0.05, Wilcoxon signed-rank test). A high level of patients’ satisfaction was achieved, with 90.3% of subjects reporting moderate to excellent overall improvement. Cutometry showed statistically significant improvement in skin elasticity at all points. There was one case of mild postinflammatory hyperpigmentation (1.25%), and one case of herpes simplex infection (1.25%).

Conclusion: The 2,790 nm Er:YSGG laser appears to be safe and effective for photorejuvenation in Asians with limited downtime and minimal adverse sequelae. It may be complimentary to other laser treatments.