



# Investigation of the Incidence of PIH and its Factors when Picosecond Alexandrite Laser is Used to Remove Benign Pigmented Lesions in Skin Types III-IV

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## **BACKGROUND**

- The high incidence of post-inflammatory hyperpigmentation (PIH) after laser treatment for benign pigmented lesions is a characteristic problem in skin types III-IV.
- Few studies have examined the incidence of PIH with picosecond lasers for benign pigment removal. To date, no studies have evaluated risk factors related to PIH incidence.
- The objective of this study is to identify risk factors for PIH during treatment with the picosecond alexandrite laser (PSAL) for pigment removal through statistical analyses.

## **METHODS**

- 1203 cases that received treatment for pigment removal with the Picosecond alexandrite laser at a single facility during a 50-month period between July 2016 and August 2020 were retrospectively analyzed.
- A combined irradiation technique was used with the following parameters:
  - 2.3- 3.5-mm spot (0 to 0 J/cm<sup>2</sup>) irradiation with zoom hand piece on the local pigment.
  - 6-10-mm spot (0 to 0 J/cm<sup>2</sup>) irradiation with diffractive lens array on full face.

## **RESULTS**

- Case demographics
  - Male:female ratio; 1143:60. Mean age 47.0 years
  - Primary indications (Figure 1).
- 31 cases (2.57%) had PIH occurrences 4 weeks after treatment.
- Statistically significant differences between the PIH group and non-PIH group were found in mean age, the complication of melasma and intensity of IWP (Immediate whitening phenomenon).
- The mean age was 4.17 higher in the PIH group. The complication of melasma was 13.23% higher in the PIH group. Strong IWP was observed in the PIH group..

## Primary Indications Treated

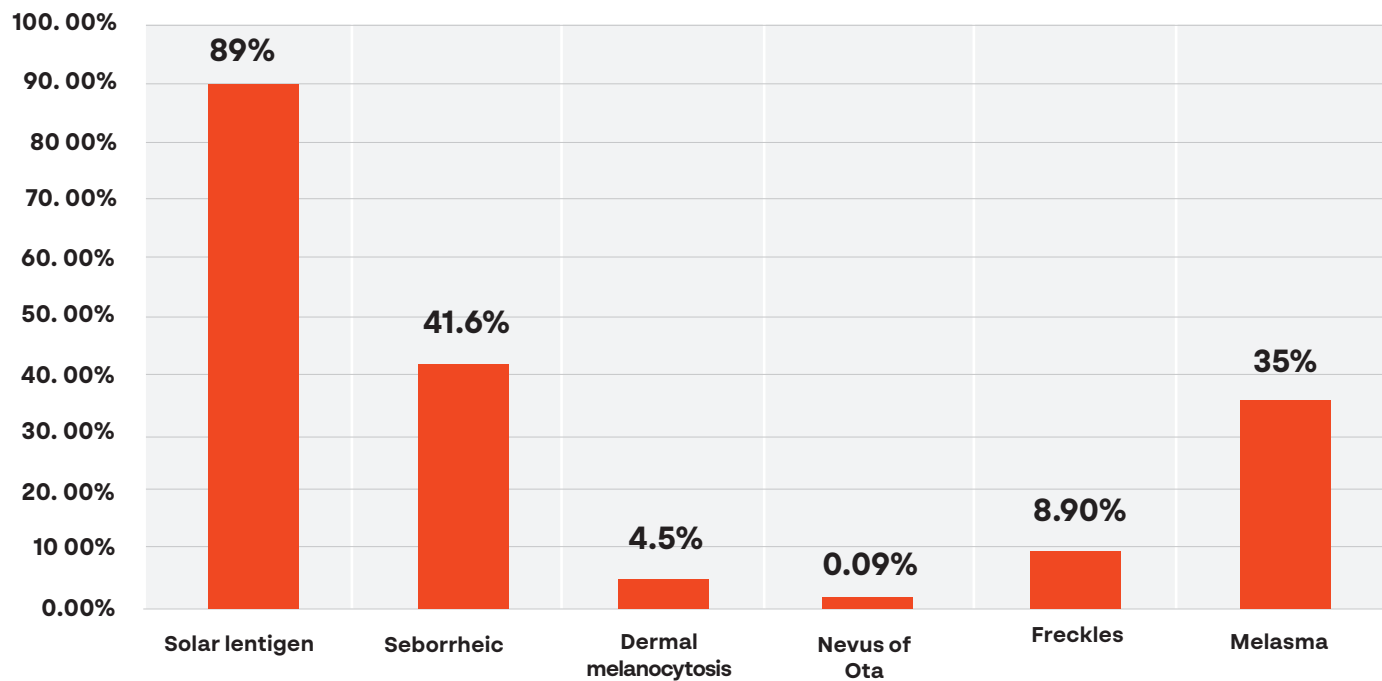


Figure 1. Primary indications treated.

## CONCLUSION

- Risk factors for PIH after Picosecond Alexandrite Laser treatment for patients with skin type III-IV were:
  - Age
  - Complication of melasma
  - Strong IWP
- Picosecond Alexandrite Laser treatment significantly reduces the incidence of PIH compared to Q-switched laser in the removal of benign pigmented lesions in skin type III-IV when properly diagnosed for complication of melasma and irradiated with the appropriate fluence.

