

S-D-3

An *In Vivo* Trial Comparing the Clinical Efficacy and Complications of Q-Switched 755nm Alexandrite (QS Alex) and Q-Switched 1064 nm Neodymium:Yttrium-Aluminum-Garnet (QS 1064 Nd-YAG) Lasers in the Treatment of Nevus of Ota

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Background: Q-switched 755nm Alexandrite (QS Alex) and Q-switched 1064nm Neodymium: Yttrium-Aluminum-Garnet (QS 1064 Nd-YAG) lasers are effective in the treatment of nevus of Ota. Our previous *in vivo* study indicated that patients better tolerate QS-Alex than QS 1064 Nd-YAG. However, in terms of clinical efficacy and long-term complications, the study did not indicate which laser is superior. Although both machines may appear to be similar in effectiveness, the low number of treatment sessions may contribute to this apparent lack of difference.

Objective: The aim of this study is to compare the clinical efficacy and complications of Q-switched 755nm Alexandrite (QS Alex) and Q-switched 1064nm Neodymium: Yttrium-Aluminum-Garnet (QS 1064 Nd-YAG) lasers in the treatment of nevus of Ota after three or more treatment sessions.

Method: Forty patients were recruited for this study and all had received three or more laser treatment sessions with an interval of at least two months between each. Half of the lesion was treated with QS Alex and the other half with QS 1064 Nd-YAG laser. The degree of lightening was assessed subjectively by the patient using a visual analog scale and objectively by two independent clinicians. Patients were called back to be examined for evidence of complications.

Results: In terms of subjective degree of lightening, QS 1064 Nd-YAG was found to be significantly more efficacious than QS Alex ($p = 0.018$). Both clinicians also found QS 1064 Nd-YAG to be more effective, but statistical significance was only detected in one, not both of their scores ($p = 0.005$ and 0.414 for observers 1 and 2 respectively). More patients that received QS Alex developed complications (4 for QS Alex and 2 for QS Nd-YAG), but the difference was not statistically significant.

Conclusion: QS 1064 Nd-YAG laser appears to be more effective than QS Alex in the lightening of nevus of Ota after three or more laser treatment sessions. However, majority (55%) of the patients reported no differences in results between the two lasers and only one of the two observers noted statistically significant improvement of QS 1064 Nd-YAG over QS Alex.

S-D-4

The Use of Variable Pulse Width Frequency Double Neodymium: YAG 532 nm Laser in the Treatment of Port Wine Stain in Chinese

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Background: Variable pulse width frequency double neodymium: YAG 532nm laser (VP532) has previously been shown to be effective in the treatment of vascular lesions such as those in Caucasians. For dark-skinned patients, such as Asians, its role has not been looked into.

Objective: To assess the clinical efficacy and complications rate of VP 532 in the treatment of port wine stain among Chinese patients.

Methods: 54 Chinese patients with port wine stain who had undergone VP 532 laser treatment were called for questionnaire assessment of their degree of clearing, and clinical examination for complications by two independent observers. For 22 patients with pre- and post-treatment photographs, the two independent observers further assessed the degree of clearing.

Results: Assessment of the questionnaire indicated that 62.9% of the patients subjectively considered that they had more than 25% degree of clearing with 33.3% having more than 50%. For those with pre and post-treatment photographs, the objective degree of improvement was less impressive with 18.1% of patients having at least 25% degree of improvement and only 13.6% having over 50%.

For complications, pigmentary and texture changes were seen in both groups (33% in group I and 11% in group II). The number of treatment sessions rather than previous use of pulse dye therapy was an important risk factor for complications.

Conclusion: VP 532 laser is only partially effective for the treatment of port wine stain among Chinese patients. Although most patients recorded some degree of subjective improvement, many did not improve by objective assessment. High fluence is necessary to achieve the desirable clinical response and while contact cooling reduces the risk of epidermal damage, texture changes can still occur. Further study is necessary to compare its use with other similar devices such as a pulse dye laser with cryogen spray cooling.