

- Title of abstract

The only and unique hybrid active, passive Q-switching and 532nm multi-pulse Q-switched Nd:YAG laser(CURAS®) in pigment treatment

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The pigmentation in melasma is not a cause but a result of dermal condition causing melasma.

The cause of pigmentation is from an external stimulation such as UV radiation and our skin forms melanin and melanosome which seems like a supra nuclear cap on top of the nucleus of keratinocyte to protect the nucleus of the cell.

Melasma has been treated just by the removal of the pigmentation but that only causes it to reappear because melanin is necessary for the protection of the skin. Therefore, for proper melasma treatment, a good dermal condition with ECM remodeling to protect the skin should be created so that melanin no longer needs to play it's role for protection.

Genesis technique is usually used simultaneously to treat BM disruption. Genesis technique is helpful for BM remodeling, because in this technique, which is performed with a relatively long pulse of 300usec, the skin temperature rises to 42-45 degrees. This temperature disturbs the three-dimensional structure of collagen, which leads to remodeling of collagen in a relatively short time of about 2 weeks.

Because of the various modes of curas® hybrid, this simultaneous treatment is possible. Curas® hybrid has 5 mode of 1064nm and 2 mode of 532nm. The Curas® hybrid laser system have two methods to generate multipulses. The first method is an active one, where the laser photon passes through a pockel's cell and gains strong energy, resulting in the emission of multiple pulses. The second method is a passive one, where energy is stored while passing through a saturable absorber and is released in a step-by-step manner, resulting in the emission of multiple pulses.

Both of these methods are necessary in clinical practice for different applications and treatment requirements During the lecture, I am going to take a look at each of these modes.