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Researchers identify better laser for treating facial spider veins

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(PhysOrg.com) -- Researchers from Boston University School of Medicine (BUSM) have concluded that the 940nm wavelength laser is superior for treating facial spider veins (telangiectasias) as compared to the 532nm wavelength laser. The findings, which appear in the recent issue of *Lasers in Surgery and Medicine*, are the first time these lasers were tested against each other for superiority.

Telangiectasias are open (dilated) blood vessels in the outer layer of the skin usually caused by sun damage or aging. When appearing on the legs, they are often called spider veins. They are common to a number diseases, including acne, rosacea, birthmarks (port-wine stains), scleroderma, several types of inherited disorders (ataxia-telangiectasia, hereditary hemorrhagic telangiectasia, xeroderma pigmentosum, and others), or with prolonged use of oral or topical corticosteroids.

According to the researchers, while both the 532 and 940nm wavelength lasers are effective for facial telangiectasias, they lacked evidence to support whether one wavelength was superior to the other until now.

A total of 24 facial anatomic sites were treated with the 532 and the 940nm wavelength lasers. The presence and severity of side effects such as pain, erythema, crusting, swelling and blistering were assessed.

The researchers found pain associated with the laser treatment was significantly less for the 940nm wavelength compared to the 532nm wavelength. Erythema post-treatment was significantly less with 940nm

relative to 532 nm. Significant crusting and swelling were only reported with the 532nm wavelength. Visual improvement with the 940nm wavelength was greater than that achieved with the 532nm wavelength. On photographic
evaluation, the 940nm laser was significantly more efficacious for larger caliber vessels than 532nm. Both wavelengths were equally effective for smaller caliber vessels.

"The 940nm diode laser was found to have greater efficacy for deeper blood vessels based upon its superior penetration of the dermis with a longer wavelength. In addition, the 940nm wavelength corresponds with a lesser absorption peak of oxyhemoglobin than that for 532 nm, resulting in slower and more uniform heating of the vessel," said lead author Emily Tierney, MD, an assistant professor of dermatology at BUSM. "In addition, there is minimal melanin absorption at the 940nm wavelength, and thus, there is less risk of post-inflammatory change or scarring," she added.

Given the efficacy and safety of the 940nm wavelength laser, the researchers recommend
this wavelength be added to the standard treatment facial vasculature.

Source: Boston University Medical Center