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September 06, 2021 | Webinar

Societal-Perceived Health Utility of Hypertrophic Facial Port-Wine Stain and Laser Treatment

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Background: Port-wine stain (PWS) is a congenital capillary malformation occurring commonly in the head and neck. Left untreated, affected areas may darken and hypertrophy over time, resulting in pronounced disfigurement, risk of spontaneous hemorrhage, and functional impairment. The burden of hypertrophic facial PWS and the benefit of laser therapy have not heretofore been well characterized. Herein, the health utility of these two states is assessed among naive observers.
Methods: Naive observers (n = 262) ranked the utility of four randomized health states (monocular blindness, binocular blindness, hypertrophic facial PWS, and laser-treated facial PWS) by means of visual analogue scale (VAS), standard gamble (SG), and time trade-off (TTO) techniques. Health states are presented using standardized facial photographs.
Results: Health utilities (VAS, SG, and TTO) were reported as follows (mean ± standard deviation): monocular blindness (0.73 ± 0.21, 0.86 ± 0.21, 0.87 ± 0.18), binocular blindness (0.51 ± 0.26, 0.72 ± 0.27, 0.69 ± 0.27), hypertrophic facial PWS (0.71 ± 0.24, 0.83 ± 0.23, 0.83 ± 0.21), and laser-treated facial PWS (0.87 ± 0.16, 0.91 ± 0.18, 0.92 ± 0.16). Laser-treated facial PWS showed significantly higher utility measures than the untreated hypertrophic state ($p < 0.001$, all measures), with a difference of 3.24 quality-adjusted life years. Linear regression analysis revealed that non-Caucasian race and higher level of education were associated with lower SG and TTO utility scores for the hypertrophic facial PWS state among naive observers.
Conclusions: Societal-perceived utility of hypertrophic facial PWS is similar to that of monocular blindness. Laser-treated facial PWS is perceived significantly more favorably than the untreated hypertrophic state. These findings provide insight into the societal burden of facial PWS and impact of laser treatment, facilitating objective comparisons with other disparate disease states.

Biography

Alyssa Heiser is currently a fourth year medical student at the Larner College of Medicine. She conducts research focused on quality of life outcomes in patients with vascular anomalies, particularly port-wine stains, under the direction of Oon T. Tan, MD, PhD at the Carolyn and Peter Lynch Center for Laser and Reconstructive Surgery at Massachusetts Eye and Ear / Harvard Medical School. Her research interests include medical education and mentorship, surgical and non-surgical aesthetic and quality of life outcomes, health economics, and facial plastic surgery.

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