

## Use of laser-assisted indocyanine green angiography in breast reconstruction: Systematic review and meta-analysis

Edgard da Silva Neto, MD

<sup>1</sup> Biophotonics Applied Health Sciences Post-graduate Program, Universidade Nove de Julho, São Paulo, Brazil

<sup>1</sup> Department of Plastic and Reconstructive Surgery, Hospital Santa Paula, São Paulo, Brazil

### Abstract

**B**ackground: Laser assisted Indocyanine Green Angiography (LAICGA) has actually become a reality, helping surgeons to determine flap perfusion intraoperative and allowing best outcomes in breast reconstruction, by determining flap viability and secure volume of intraoperative expansion. This study stratified outcomes based on a meta-analysis of complications.

**Objective:** A systematic review and meta-analysis to verify if LAICGA prevents complications and improve outcomes in breast reconstruction

**Methods:** Only longitudinal trials comparing clinical assessment of skin flaps to patients submitted to LAICGA during breast reconstruction trials were included. MEDLINE (PubMed), Google Scholar and LILACS databases were searched for articles published up to December 2018. Random-effects meta-analyses were conducted for complications (necrosis, infection, seroma and surgical reintervention).

**Results:** Ten studies reporting LAICGA in breast reconstructions met inclusion criteria containing control group with clinical evaluation and reported outcomes of interest (n: 2256). The risk of occurrence of flap necrosis was 2.06 times higher in control group (clinical assessment), with statistical relevance (p: 0.0006), 95% CI (1.36 – 3.11). Necessity of reoperation for any complication was statistically relevant, adding a relative risk of 2.06 comparing to clinical assessment (p:0.0002), 95% CI (1.41-3.0). Incidence of infection was higher on the control group (OR: 1.78, 95% CI, 1.00 – 3.17) but not statistically relevant (p: 0.05). Seroma did not differ from both groups neither clinically or statistically (OR: 1.06, 95% CI, 0.60-1.86, p: 0.85).

**Conclusions:** The use of LAICGA during breast reconstruction procedures prevents necrotic events and need for surgical reintervention. The study suggests that LAICGA has benefits from preventing infection.



### Biography:

Edgard da Silva Neto has completed his Medical School at the age of 23 years from Universidade de Nove Julho and General and Plastic Surgery training at Santa Casa de São Paulo. Is completing his doctoral program in Biophotonics applied to health systems at Universidade Nove de Julho. He is assistant at Plastic and Reconstructive surgery in Santa Paula Oncology Institute and Medicine Professor at Universidade Nove de Julho.



[13th International Conference on Optics, Photonics & Laser](#); Webinar- April 22-23, 2020.

### Abstract Citation:

Edgard da Silva, Use of laser-assisted indocyanine green angiography in breast reconstruction: Systematic review and meta-analysis, Euro optics 2020, 13th International Conference on Optics, Photonics & Laser; Webinar- April 22-23, 2020 (<https://optics.physicsmeeting.com/abstract/2020/use-of-laser-assisted-indocyanine-green-angiography-in-breast-reconstruction-systematic-review-and-meta-analysis>)