



# Intravascular Laser Irradiation of Blood Improves Functional Independence in Subacute Post-Stroke Patients: A Retrospective Observational Study from a Post-Stroke Acute Care Center in Taiwan

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## Abstract

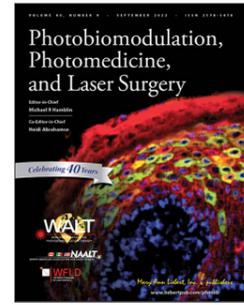
**Objective:** To investigate the effect of intravascular laser irradiation of blood (ILIB) in patients with post-stroke disability.

**Background:** Helium-neon intravascular laser at a wavelength of 632.8 nm has been applied in post-stroke rehabilitation for many years in Taiwan. Data were collected from our practice to validate its effectiveness.

**Materials and methods:** This was a single-center, retrospective, observational study. Data from 34 patients with first-episode ischemic stroke who participated in the post-acute care program and had an initial modified Rankin Scale (mRS) score of 4 between July 2018 and June 2021 were retrospectively reviewed. Twelve patients who received conventional rehabilitation plus ILIB were in the ILIB group. Twenty-two patients who received conventional rehabilitation only were in the control group. Assessments, including the mRS, Barthel Index (BI), Berg Balance Scale (BBS), six-minute walk test (6MWT), and Fugl-Meyer Assessment of the upper extremity (FMA-UE), were performed to evaluate any post-treatment improvement.

**Results:** Patients who received ILIB had significantly superior mRS scores than those who received only conventional rehabilitation ( $p = 0.028$ ). Patients in the ILIB group experienced more improvements in the BI, 6MWT, and FMA-UE; however, these were nonsignificant. In addition, the control group experienced a greater improvement in the BBS than the ILIB group. Further studies are required to elucidate the mechanism of action of ILIB therapy fully. There was no major adverse event reported in patients receiving ILIB therapy.

**Conclusions:** ILIB improved independence in post-stroke patients, suggesting that ILIB is a promising treatment for facilitating post-stroke recovery.



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### Information

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### Keywords

- stroke
- post-stroke impairment
- intravascular blood irradiation
- intravascular laser
- low-level laser therapy

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