

INPLASY PROTOCOL

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Corresponding author:
Junbing He

junbinghe_gmc@163.com

Author Affiliation:

The Clinical Medicine Research Laboratory, The Intensive Care Unit, Jieyang Affiliated Hospital, Sun Yat-sen University, Jieyang, Guangdong, PR China.

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Review Stage at time of this submission: Preliminary searches.

Conflicts of interest:
None declared.

INTRODUCTION

Review question / Objective: How do PDT and lasers affect the clinical results of non-surgical treatment in patients with peri-implant diseases? Does PDT and lasers, when used as an adjunctive treatment,

A comparative evaluation of lasers and photodynamic therapy in the non-surgical treatment of peri-implant diseases: A Bayesian network meta-analysis

Lin, Y¹; He, J²; Chen, L³; Chen, X⁴; Liao, S⁵; Yang, S⁶; Lin, Y⁷; Bai, S⁸; Huang, C⁹.

Review question / Objective: How do PDT and lasers affect the clinical results of non-surgical treatment in patients with peri-implant diseases? Does PDT and lasers, when used as an adjunctive treatment, provide superior clinical and patient-preferred outcomes compared with non-surgical mechanical debridement in patients with peri-implant diseases? What was the rankings on the effect of PDTs and different lasers as a non-surgical treatment and which one is more suitable for patients with peri-implant diseases?

Information sources: A literature search was conducted independently and in duplicate (YL and HJ) for relevant articles in the following electronic databases: the Cochrane Library, Web of Science and PubMed up to January 2022.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 January 2022 and was last updated on 05 January 2022 (registration number INPLASY202210020).

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treatment and which one is more suitable for patients with peri-implant diseases?

Condition being studied: A literature search and analysis was conducted independently.

METHODS

Search strategy: A literature search was conducted independently and in duplicate (YL and HJ) for relevant articles in the following electronic databases: the Cochrane Library, Web of Science and PubMed up to January 2022. The detailed search strategy is reported in Supplementary file, with a combination of MeSH terms, keywords and other free text words terms, such as “peri-implantitis”, “photodynamic therapy” and “laser,” to identify papers. In addition, grey literature were also sought by searching a database listing unpublished studies (OpenGray [<http://www.opengrey.eu/>], formerly OpenSIGLE). Furthermore, references of related papers and reviews were cross-checked by hand search to make a supplement.

Participant or population: RCT in patients diagnosed with peri-implant diseases.

Intervention: Lasers and photodynamic therapy.

Comparator: Conventional mechanical debridement.

Study designs to be included: randomized controlled trials.

Eligibility criteria: Inclusion criteria were defined as : i) RCT in patients diagnosed with PD; ii) PD treated by any type of laser or CMD non-surgically ; iii) Studies describing outcomes of one of the clinical parameters (PPD, CAL, or MBL) to assess the effects of PDT or different lasers on PD.

Information sources: A literature search was conducted independently and in duplicate (YL and HJ) for relevant articles in the following electronic databases: the Cochrane Library, Web of Science and PubMed up to January 2022.

Main outcome(s): The primary outcomes were the changes in PPD.

Additional outcome(s): The secondary outcomes were the changes in MBL and CAL.

Quality assessment / Risk of bias analysis: Quality assessment of the studies was performed by using the Cochrane Collaboration tool's in Review Manager software (version 5.0 for Windows; the Cochrane Collaboration, Oxford, UK).

Strategy of data synthesis: Traditional pairwise meta-analysis was performed using DerSimonian-Laird random effects model. Pooled estimates were expressed as weighted mean differences with their associated 95% confidence intervals (CIs). Statistical heterogeneity was measured with the I² statistic and a value greater than 50 % was considered to show moderate to high heterogeneity [28]. Bayesian NMA was performed with ADDIS software v1.16.5.

Subgroup analysis: We conducted subgroup analysis when needed.

Sensitivity analysis: Node-split analysis was utilized to check whether each node has local inconsistency, and $p < 0.05$ was set as significant inconsistency.

Language: No language restriction was used.

Country(ies) involved: China.

Keywords: photodynamic therapy, lasers, peri-implant diseases.

Contributions of each author:

Author 1 - Yao Lin.
 Author 2 - Junbing He.
 Author 3 - Liangping Chen.
 Author 4 - Xiaozhu Chen.
 Author 5 - Shuanglin Liao.
 Author 6 - Shuai Yang.
 Author 7 - Yingying Lin.
 Author 8 - Shuncheng Bai.
 Author 9 - Chuhui Huang.