

## ·基础与临床研究·

## 激光辅助金属托槽瓷面粘接效果的 Meta 分析

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**【摘要】 目的** 采用 Meta 分析的方法评价激光辅助金属托槽瓷面粘接的效果。**方法** 检索 PubMed、The Cochrane Library、CBM、CNKI、万方数据库, 搜集关于激光辅助金属托槽瓷面粘接时剪切粘接强度或瓷面粘接剂残余指数的文献, 检索年限均为自建库至 2021 年 5 月。根据 Cochrane 系统评价者手册实施文献筛选, 以 Stata 16.0 进行异质性检验、发表偏倚检验及敏感性分析, 并使用 RevMan 5.4 进行亚组分析。**结果** 最终纳入 12 篇文献。以剪切粘接强度为结局指标的文献 12 篇, 包含 16 组研究数据; 以瓷面粘接剂残余指数为结局指标的文献 4 篇, 包含 5 组研究数据。Meta 分析的结果显示: 与氢氟酸处理瓷面相比较, 在粘接金属托槽前使用激光处理瓷面, 可以使瓷面粘接剂残余指数降低 [MD=-1.44, 95% CI (-2.37, -0.51),  $P=0.001$ ]。而对于剪切粘接强度, 激光处理瓷面后相较于氢氟酸并未显示出更强的效果 [MD=-0.63, 95% CI (-1.19, -0.07),  $P=0.000$ ]。**结论** 与氢氟酸处理瓷面的传统方法相比, 激光辅助金属托槽瓷面粘接可降低瓷面粘接剂残余指数, 不能增强剪切粘接强度。激光处理瓷面后, 大部分研究结果能够满足正畸临床所需求的粘接强度, 并能在一定程度上降低托槽去粘接后瓷面损伤而带来的重新修复的风险。

**【关键词】** 激光 金属托槽 瓷 剪切粘接强度 粘接剂残余指数

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## A Meta-analysis of the effect on laser-assisted metal brackets bonding to porcelain surface

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**【Abstract】 Objective** The aim of this study was to evaluate the effect that laser-assisted porcelain surface bonding of metal brackets by meta-analysis. **Methods** PubMed, the Cochrane Library, CBM, CNKI and Wanfang databases were searched from the date of establishment to 2021-05, and the literatures on laser-assisted porcelain surface bonding of metal brackets including shear bond strength or adhesive remnant index were collected. According to the Cochrane systematic review manual, we screened the literature. Stata 16.0 was used for heterogeneity test, publication bias test and sensitivity analysis. Revman 5.4 was used for subgroup analysis. **Results** Finally, 12 articles were included. There were 12 literatures with shear bond strength (SBS) as the outcome index, including 16 groups of research data. There were 4 articles with adhesive remnant index (ARI) of porcelain surface as the outcome index, including 5 groups of data. The results of Meta-analysis showed that: compared with the hydrofluoric acid treatment of porcelain surface, laser treatment of porcelain surface before bonding metal brackets could reduce the ARI [MD=-1.44, 95% CI (-2.37, -0.51),  $P=0.001$ ]. For the shear bond

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