

## ·基础与临床研究·

## 脱矿釉质树脂渗透后的再矿化研究

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**【摘要】目的** 研究渗透树脂联合生物活性玻璃溶液对脱矿釉质治疗与再矿化后的牙齿颜色与硬度的影响。**方法** 将20块经脱矿液脱矿的釉质块用渗透树脂治疗后随机分为A组和B组, 分别采用生物活性玻璃溶液和去离子水进行再矿化; 对2组进行二次脱矿处理。采用HSV-1000IS显微硬度计和分光光度计分别检测不同处理后2组即刻的硬度和颜色。**结果** (1) 再矿化后A组的显微硬度值( $209.41 \pm 21.53$ )大于B组硬度值( $176.22 \pm 21.38$ ); 二次脱矿后的A组的显微硬度值( $121.55 \pm 14.75$ )大于B组( $95.52 \pm 13.29$ ), 差异有统计学意义( $P < 0.05$ ); (2) 分光光度计颜色检测结果显示, A组再矿化后和二次脱矿后的色差值均小于B组( $P < 0.05$ ), 2组再矿化后色差值均小于3.7, 肉眼不易分辨; A组二次脱矿后的色差值小于3.7, 肉眼不易分辨; B组二次脱矿后的色差值大于3.7, 临床不可接受。**结论** 渗透树脂联合生物活性玻璃溶液对脱矿釉质治疗与再矿化后颜色和硬度方面较单一渗透树脂治疗更有优势。

**【关键字】** 脱矿釉质 再矿化 生物活性玻璃溶液 渗透树脂 分光光度计

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## Experimental study on remineralization of demineralized enamel resin after penetration

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**【Abstract】Objective** The aim of this study was to observe the effect of infiltrant resin combined with bioactive glass solution on the color and hardness of teeth after demineralization enamel treatment and remineralization. **Method** 20 enamel blocks demineralized by demineralization solution were treated with infiltrant resin and randomly divided into two groups, A and B. The A and B groups were remineralized by the bioactive glass solution and deionized water respectively. Both A and B groups were subjected to secondary demineralization treatment. The HSV-1000IS micro hardness tester and the spectrophotometer were used to detect the hardness and color immediately after different treatments. The microhardness results were recorded as SMH0 (normal enamel), SMH1(after demineralization), SMH2 (after infiltration resin treatment), SMH3 (after remineralization), and SMH4(after secondary demineralization). The surface color difference values in the normal enamel group and the groups after demineralization, after infiltration resin treatment, after remineralization or after secondary demineralization were recorded as  $\Delta E_1$ ,  $\Delta E_2$ ,  $\Delta E_3$ ,  $\Delta E_4$ . When  $\Delta E$  value is in the range of 0 to 1, the level is scored as difficult for the naked eye to detect; when the  $\Delta E$  value is in the range of 1.1-3.7, the level is scored as difficult for the naked eye to distinguish; when the  $\Delta E$  value  $> 3.7$ , it means that the color deviation is too large to be acceptable in the clinic. **Results** (1) The microhardness value of group A ( $209.41 \pm 21.53$ )

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