

Effect of two chromatogens on the color stability of three provisional materials before and after thermocycling –an *in vitro* study

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Introduction: An acceptable cosmetic effect in any dental restoration has been regarded as a very important aspect of quality dentistry. In long term cases of full mouth rehabilitation with interim prosthesis or even cases of provisionalization in the anterior region of the mouth, staining and discoloration of restorations is the main esthetic concern of the patients which brings them back to the dentist's time and again, adding to the number of visits and costs. The Indian food consists of various chromatogenic substances such as tea, coffee, turmeric/ red chilli powder, spices, oil etc. which are consumed on a daily basis and can adversely affect the color of the provisional restorative material. Thermocycling can be done to simulate this clinical situation in the laboratory. Considering these facts, the present study was planned.

Aim:- To evaluate and compare the effect of two chromatogens on colour stability of three provisional materials before and after thermocycling.

Materials and methods:- Three commercially available provisional materials were chosen – DPI heat-cure, protemp^{TM4} chemical-cure and Luxatemp solar dual cure. Flat circular metallic dies were prepared of 22 mm diameter and 2mm thickness. Total 150 samples were prepared from the materials using these dies. The samples were finished and polished using standardized method. They were divided into 5 groups. Two groups from each material were subjected to a standardized thermocycling regimen. The samples were immersed in two staining solution- coffee solution and sambhar solution for 30 days. Then artificial saliva was used for the control group. The solutions were prepared using a standardized method and were changed everyday. The color measurements were done twice- once before thermocycling and staining and another after, in CIE L*a*b* color system using a reflectance spectrophotometer.

Results:- Statistical analysis was done in SPSS version 20.0 using one-way ANOVA and Tukey's post-hoc test. p value <0.05 was considered statically significant.

Conclusions:- Luxatemp Solar showed least color stability, followed by Protemp^{TM4} whereas DPI showed maximum color stability. Sambhar showed higher staining ability. The color changes seen with coffee and control were not clinically perceptible. Thermocycled samples showed more color change than non thermocycled samples.

DOI: 10.4103/0972-4052.306375