" لا يكلف الله نفسا إلا وسعها لها ما كسبت و عليها ما اكتسبت ربنا لا تؤاخذنا إن نسينا أو أخطأنا ربنا ولا تحمل علينا إصرا كما حملته على الذين من قبلنا ربنا ولا تحملنا ما لا طاقة لنا به واعف عنا و اغفر لنا و ارحمنا أنت مولانا فانصرنا على القوم الكافرين"

صدق الله العظيم

سورة البقرة

COMPARISON BETWEEN LIGHT CURE AND CHEMICAL CURE GLASS IONOMER CEMENT IN ORTHODONTIC BANDING (AN IN VITRO STUDY)

THESIS
Submitted In Partial Fulfilment Of The Requirements For Master's Degree Of Clinical Dental Science (Orthodontics)

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DEDICATION

TO MY LOVELY FAMILY

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RECOMMENDATION

From the previous results of this study we recommend the following:

1. The Fuji-Ortho LC glass ionomer cements showed a superior bond strength which was statistically significant than the Medicem chemical cure glass ionomer cement in restored teeth with either amalgam and posterior composite restoration.
2. The light cure cement is better to be used than the chemical one.
3. As the fixed orthodontic therapy takes longer time more than one month (which is the longest test time of this study) and as with any in vitro study, many factors in the oral environment are impossible to reproduce in the laboratory. Further work is required to determine whether the finding of this in vitro study are in witness in clinical practice.

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INTRODUCTION

Retention of orthodontic molar bands is a basic requirement of fixed appliance orthodontic treatment. Banding of molar has the advantage over bonded attachments in that it resists occlusal interferences more readily and hence more reliable during treatment band retention is provided mechanically by the band's close adaptation to the tooth surface assisted by the cement lute.

Initially zinc phosphate cement has been used widely for band cementation but it has several disadvantages for this purpose being brittle, having a relatively high solubility in the mouth and a weak adherence to tooth substance. It doesn't form any degree of chemical bond to either stainless steel or enamel and relies on mechanical means for its retentive effect.

Other dental cements have been developed that overcome some of these weaknesses. Polycarboxylate cements , which react chemically with enamel and stainless steel, were introduced to the orthodontic speciality in the early 1970s. Both laboratory and clinical studies found these cements to be suitable for band cementation but their short setting time and high viscosity weakened their popularity.

Glass ionomer cements (GIC) were introduced in 1971 and are now in wide spread use for band cementation these cement bond to both enamel and metal. Fluoride release has been measured during the glass ionomer cement setting reaction and after setting . Additional fluoride release has been demonstrated when GIC are exposed to acids. Compared with polycarboxylate cements GIC show higher bond strength