

CHAPTER VI

CONCLUSIONS

The objectives of this study were to measure and compare the shear bond strength values of five adhesive systems when used to bond orthodontic metal brackets to porcelain surfaces and to describe the modes of bond failure after debonding the brackets among the groups of five different adhesive systems. The mean shear bond strength values in each groups were 10.9, 18.5, 20.7, 23.7 and 27.6 MPa, respectively. All groups in this study showed mean shear bond strength values which were greater than those required for optimal orthodontics forces and, therefore, can be considered sufficient for clinical application.

Porcelain/resin interface was the commonest site of failure of Group I whereas the failure sites of the other groups show mixed types of bond failure with no specific location. In the present study, all of the groups had specimens with porcelain surface fractures, except for Group I (HF acid + SystemTM1+). Therefore, the suggested system for bonding orthodontic metal brackets to porcelain surfaces in clinical practice is 9.6% hydrofluoric acid etching for 60 seconds before bonding with SystemTM1+.



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright© by Chiang Mai University
All rights reserved

Further studies

1. Test the bonding of brackets to different types of porcelain
2. Test bonding with different types of silane or adhesive resin
3. Test bonding with light cured adhesive resin
4. Determine the ideal HF concentration for optimum bond strength on porcelain surfaces

Determine the ideal HF etching time for optimum bond strength on porcelain surfaces