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Clinical evaluation of Zirconia and stainless-steel crowns in primary molar teeth

Sumer M Alaki

King Abdulaziz University, Saudi Arabia

Aim: This randomized clinical trial (RCT) compared the clinical outcomes of two full-coronal restorations (Stainless steel crowns SSCs and zirconia crowns Nu/ZR) in carious primary molars teeth.

Materials & Methods: Children attending the King Abdulaziz University, Faculty of Dentistry (KAUFD) clinics who need restorations will be screened for inclusion criteria till 120 teeth are recruited (60 teeth for SSC restorations and 60 for Nu/ZR restorations). Split mouth technique will be used to ensure equalizing variables for both groups. Randomization will be done using SPSS software version 20.0. A simple descriptive statistic will be used for analysis by wilcoxon signed-rank test. Level of significance will be set at ($\alpha = 0.05$) and level of confidence at (95%).

Results: While looking at the improvements in gingival health relative to interventions, both zirconia and SSC have significant changes through all time points. However, zirconia performed better at the third month with 80% compared to SSC with only 13.3% improvement with $p\text{-value} < 0.001$ and 0.005 respectively. At the sixth month, all samples under group zirconia already improved while only 73.3% from SSC show improvement. The remaining samples happened to have positive changes at the 12th month. Regarding the plaque retention also the zirconia crowns shows improve performance than SSC.

Conclusion: As both SSC and zirconia crowns presented to be excellent choice for posterior teeth restorations, however we can conclude that zirconia crowns performed better regarding gingival response to the material of restoration and plaque retention despite its excessive cost.

Biography

Sumer M Alaki is working as an Associate Professor and Consultant Pediatric Dentist in Pediatric Dentistry department at King Abdulaziz University, Saudi Arabia. She has completed her Bachelor in Dental Science and Oral Surgery at King Abdulaziz University in 1993 and Master of Science in Pediatric Dentistry at University of Michigan in 2002. She completed her Doctor of Dental Public Health degree at University of Michigan in 2006. Her research interests include Pediatric Oral Health in children with disabilities and dental education.

salagy@kau.edu.sa

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