**P17**

**Water Absorption of an Experimental Polyurethane-based Polymer Derived from Palm Oil.**

**Purpose of Study:** Gan et al. (2005) patented polyurethane-based polymer derived from palm oil with possible application in clinical dentistry. Therefore, it was the purpose of this study to compare the water absorption of this experimental polyurethane-based polymer (EPP) with commercially available urethane oligomer, Eclipse™ Prosthetic Resin System (Dentsply Trubyte, USA) and polymethyl methacrylate-based polymers.

**Materials and methods:** 5 disc-shaped specimens, (50±1)mm in diameter and (0.5±0.1)mm thick of each material, heat-polymerized (Melliodent Heat Cure, Heraeus Kulzer, Germany) and auto-polymerized (Melliodent Rapid Repair, Heraeus Kulzer, Germany) PMMA, and urethane oligomer-based resin (Eclipse™ baseplate and contour resin) were prepared according to the manufacturer's instructions. EPP was prepared using polyol FA18, dicarboxylic acid (MDI) and diisocyanate. The specimens were tested for amount of water absorption (μg/mm²) according to ISO1567:1999(E). Specimens were weighed until a constant mass and immersed in the water for 7 days ± 2 hours. Specimens were then reconditioned to a constant mass by weighing them up to an accuracy of 0.2 mg. The data were analyzed with one-way ANOVA and Dunnett's T3 multiple comparison as the post hoc test.

**Results:** EPP exhibited the highest water absorption (195.17 μg/mm² ± 48.43), followed by Melliodent® Heat Cure (30.41 μg/mm² ± 1.04), Eclipse™ Contour Resin (16.63 μg/mm² ± 1.66), Melliodent® Rapid Repair (19.78 μg/mm² ± 1.21) and Eclipse™ Baseplate Resin (18.16 μg/mm² ± 0.466). One-way ANOVA showed that EPP was significantly different from all other materials. No significant difference was found between Eclipse™ Baseplate and Melliodent® Rapid Repair.

**Conclusion:** EPP does not meet the requirements of ISO1567:1999(E) for water absorption (≤ 32 μg/mm²). As a denture base polymer and other application in clinical dentistry, EPP requires further refinement.

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**P18**

**The Effectiveness of Using Oral Rinses in Controlling Dental Plaque Microorganisms.**

**Purpose of the study:** The objectives of the study were to compare the clinical effectiveness of chlorhexidine (CHX) (Oradex®) and commercialized herbal rinse (clow extract) (Mustika Ratu®) with the use of conventional oral hygiene methods, and to determine the duration of suppression effects of oral bacteria following single rinse with the commercialized rinses.

**Materials and method:** The experiment was performed by enabling both mouthrinses and a negative control rinse (distilled water) to be tested on the subject for periods of 120 minutes separated by 1 week interval for each rinse. Swabs of tooth surfaces were obtained before rinsing and 30, 60, and 120 minutes after rinsing. The samples were serially diluted and plated on BH agar. After incubation at 37°C for 18-24 hours, the phenotypic appearance and the colony forming units (CFU/ml) of each agar plate were obtained.

**Results:** Bacterial colony formation was significantly inhibited by the two mouthrinses tested. The mouthrinses which contained either chlorhexidine or clow extract exhibited similar levels of antibacterial activity resulting in less than 50 × 10⁶ CFU/ml at 30 minutes except distilled water which produced no effect on the microorganisms control. However, the mouthwash which contained chlorhexidine exhibited a longer duration of activity in controlling oral microorganisms than with clow extract mouthrinse.

**Conclusion:** Both rinses containing chlorhexidine and clow extract were effective in reducing dental plaque microorganisms. However, chlorhexidine exhibited a longer suppression effect on the microbes compared to clow extract.