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Effect of coriander essential oils on microorganisms in denture patients and its effect on color of the denture base

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Introduction: Return to the nature in medical field has a great concern nowadays to be away from the side effect of chemicals and synthetic medication. In ancient Egyptian, Indian and Buddhist culture many plants were used to treat diseases and coriander is one of the most used medicinal plants in these cultures because of its anti-inflammatory and anti-microbial effect.

Purpose of the Work: To evaluate antimicrobial effect of essential oil of coriander on the microorganism related to the fitting surface of the denture and its effect on the color of denture base material.

Materials & Methods: In microbiological test, 20 complete denture wearers were selected. Patient was instructed to clean the fitting surface of the denture with brush and apply the material with fine brush and put the denture in a glass of water over night and at morning patient was instructed to rinse the denture with running water before using and this were repeated for ten days. Swabs were taken from the fitting surface of the denture before application of materials and after application of materials for ten days, other swabs were taken and culturing, differentiation and counting of microorganism were done. In color change test, 26 specimens 12 clear & 12 pink heat cured acrylic denture base (25~15~2.5 mm) were prepared; 2 specimens were used as control group and 24 specimens were used as test group (Coriander oil was applied to the samples with brush and the all surfaces was painted and every day the samples was washed with running water and the oil applied to the samples for 30 days) and the intensity of the color was measured using spectrophotometer device at 360 nm.

Results: Microbiological results: Fitting surface of denture contained *Staphylococcus epidermis* 4.2%, *Staphylococcus aureus* 3.2%, *Streptococcus* 50%, Coliforms 39.6% and *Candida* 2.7%. After application of coriander *Staphylococcus epidermis* 3.6%, *Staphylococcus aureus* 2.8%, *Streptococcus* 13.4%, Coliforms 35.5% and *Candida* 1.34% were observed. Color change test showed significant increase in color change of clear acrylic denture base in comparison with pink acrylic denture base with coriander application.

Conclusion: Coriander essential oil had remarkable antiseptic effect on oral microorganisms related to the fitting surface of dentures. Coriander, as antiseptic, caused significant change in color of clear heat cured acrylic resin denture with little change in color of pink heat cured acrylic resin.

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3D printing in dentistry: Rapidity, specificity and accuracy

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3D printing is a form of additive manufacturing technology where a three dimensional object is created by laying down successive layers of material. It is also known as rapid prototyping. It is the next revolution in field of dental and medical science. It has role in every branch of dentistry. It plays a pivotal role in computer guided surgery, maxillofacial prosthesis, face reconstruction, orthognathic wafer & 3D models. It adds a new dimension to the treatment planning with facility to perform mock surgery. It adds a new level to precision in implantology through guided surgery. A concept of "tooth in an hour" is no far with help of 3D printing. A better understanding of work flow is required with knowledge regarding the dicom and stl files conversion and 3D printers.

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