DOI https://doi.org/10.5281/zenodo.10049652#11

TWIST, 2023, Vol. 18, Issue 2, pp. 1-22

TWIST

Journal homepage: www.twistjournal.net

Progression of Dental Caries and Evaluation of the Application of Topical Fluoride Combined with Natural Product in School Going Children

Fehmida Sultana
Department of Oral and Maxillofacial Surgery, King Khalid University, College of Dentistry, Abha, Saudi Arabia
[*Corresponding author]

Abstract
Fluoride is a safe and effective agent that can be used to prevent and control dental caries. Fluoride can be delivered topically and systemically. Topical fluorides strengthen teeth already present in the mouth, making them more decay resistant, while systemic fluorides are those that are ingested and become incorporated into forming tooth structures. Systemic fluorides also provide topical protection because fluoride is present in saliva, which continually bathes the teeth. Tea can be used as antioxidant, antimutagenic and anticariogenic. It is used to improve oral health including dental caries, periodontal disease and tooth loss, abolition of halitosis, oral malignancy prevention and regression. Studies on the development of antiplaque agents in the prevention of dental caries have investigated the effect of some tea preparations and their individual components on the glucan synthesis catalyzed by glucosy transferase from mutans streptococci. Extracts of tea combined with topical fluoride showed appreciable inhibition of the dental caries prevntion. For bacterial screening four Gram-positive and four Gramnegative bacteria was used against crude acetone and chloroforms extracts at a concentration of 200 µg/ml and 400 µg/ml. Upon antibacterial screening, the crude ethyl acetate extract of C. sinensis L. extract showed highest activity against S. mutans than most of other organisms. A single compound (SR-1) isolated from the crude ethyl acetate extract of C. sinensis L. (Black Tea), having RF value 0.73 showed highest antibacterial activity against S. mutans among the four Gram positive and four Gram negative bacteria at a concentration of 200 µg/ml and 400 µg/ml. The zone of inhibition are 16 mm and 24 mm when extract used at a concentration 200 µg/ml and 400 µg/ml, respectively. These zone of inhibition are more than that of the standard kanamycin which showed only 13 mm. This is perhaps due to the partial resistance of Kanamycin against *S.* mutans.

Keywords
Dental Caries, Fluoride, Children

The full length manuscript can be sought from the corresponding author or upon requesting the editorial office with due intensions for usage and implementation.