EDITORIAL

THE NEOTERIC TRENDS OF ORAL CANCER

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Oral Cancer is one of the most challenging malignancy and leading cause of mortality worldwide. It is the eighth most common cancer in the world with a greater male predilection. According to epidemiologic data, India alone is estimated to have 6 million cancer patients at any point of time and nearly 2 million new cases detected every year. Hence the need of the hour is to nip this evil in the bud by early diagnosis and appropriate treatment. The major risk factors are tobacco, alcohol, areca nut, and betel quid with age, family history, immunosuppression, HPV infection or other systemic illnesses further modifying the course of the disease. Over the past few years there have been a shift in the incidence of oral cancer. Traditionally affecting the people in older age group, recent cases in young adults have been reported.

The transformation of normal cells to preneoplastic cells and finally to cancer cells is a multi-step process involving various genetic and molecular changes resulting in an increased cellular proliferation, loss of cell cohesiveness, local tissue infiltration and distant metastasis.

Despite the multidisciplinary therapeutic approach, oral cancer has a poor prognosis and also has a high recurrence rate.

Hence it is very essential to understand the exact etiopathogenesis of the disease as various molecular or genetic pathways involved in oral cancer initiation as well as progression will not only allow us to make a more accurate diagnosis but also help to predict the course of the disease, thereby opening vistas for more novel approaches in treatment and prevention.

Currently there has been a paradigm shift in the diagnostic process of oral cancer from traditional histopathological examination towards the specific biomarkers which provides information regarding status of cell at any point of time thereby helping us in early diagnosis and intervention. Also the sensitivity and specificity of these biomarkers are very high. In this post-genomic era, scientists are conducting numerous researches on the changes occurring in nucleic acids (DNA/RNA) or proteins to understand the progression of normal cell to neoplastic cell.

Various genetic alterations which occur during the process of carcinogenesis include mutations, amplifications, rearrangements, deletions and loss of heterozygosity leading to increased cellular activity. One of the initial genetic changes found in DNA of oral cancer cells was a mutation of the $TP53$ gene leading to increased growth of abnormal cells and formation of cancers. Another important genetic mutation is that of Epidermal Growth Factor Receptor (EGFR) which may initiate a cascade of cellular events resulting in progression of the disease. Likewise there are various other biomarkers, some are yet to be identified which can change the expression of disease.

Hence identifying these genetic markers will be beneficial in targeting the specific gene therapy, thereby curing the disease at an infancy stage and subsequently improving the quality of life of patients.
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TABLE OF CONTENTS

EDITORIAL

1. Nanodentistry: The Story So Far ........................................................................................................... 1-1
   Rakesh N.

ORIGINAL RESEARCH

2. Reliability of Ameloglyphics for Person Identification Following Adverse Conditions ........................................... 2-6
   Rakesh N., Sujatha S., Pavan Kumar T., Yashoda Devi B.K., Divya Gupta and Harish B.N.

3. Absorbable Gelatin Sponge versus Alloplastic Graft Material as Adjuvants in Direct Sinus Lift Procedures - A Comparative Study ........................................................................................................... 7-17
   Sushma Sonale M. N., Ranganath Krishnappa, Vibha Shetty, Kavitha Prasad and Lalitha R. M.

4. Design of Lab Model Mechanical Strength Test Instrument for Tensile Strength Determination of Film Formulations ........................................................................................................... 18-22
   Mukherjee D. and Bharath S.

5. Spectrophotometric Method Development and Validation of Azithromycin in Tablet Formulation ........................................... 23-27
   Suma B.V., Joel Monichen Thachemperil and Venkataramana C.H.S.

6. Evaluation of Anti-Hypertensive Activity of Mitragyna Parvifolia (Roxb.) Korth. Root Extract and its Vasorelaxation Potential on Calcium Chloride Induced Contractions in Isolated Rat Aorta ...................................................................................................... 28-34
   Rimi Ghosh, Anita Murali and Gowri R.

7. Evaluation of In-vivo Antioxidant Potential of Ecbolium Viride (Forsk.) Alston Roots on Carbon Tetra Chloride Induced Oxidative Stress in Wister Rats ........................................................................................................... 35-40
   Ashoka Babu V.L., Arunachalam G. and Madhavan V.

REVIEW ARTICLE

8. Extraction vs Non Extraction Controversy - A Review .................................................................................. 41-48
   Adeeba Khanum, Prashantha G.S., Silju Mathew, Madhavi Naidu and Amit Kumar

9. Vaccine for Dental Caries- An Imminent Target ................................................................................................ 49-54
   Abraham M., Shwetha K. N., Vanishri H. C., Roopa R. S., Dominic A. and Sowmya S. V.

    Shwetha K.M. and Ranganath K.

CASE REPORTS

11. Application of LASER in Periodontology- A Case Series ........................................................................ 63-66
    Bhavya B., Ashwini S. and Shruthi K.R.

12. Congenital Insensitivity to Pain – Boon or Bane??? A Case Report with Dental Implications .................................................................................................................. 67-69
    Vidya K., Latha Anandakrishna and Prakash Chandra Shetty

13. Role of Maxillo-Facial Prosthodontist to Aid in Brachytherapy for Squamous Cell Carcinoma of Palate with Ancillary Prosthesis: A Case Report ........................................................................................................ 70-74
    Suma, Sneha Poojary and Shrestha Singania

14. Management of Non-Vital Teeth with Open Apices using MTA: Two Case Reports ........................................................................................................... 75-79
    Karan Narang, Mohini Nayak, Abdul Wahed, John V. George and Sylvia Mathew
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