

Diagnostic Potential of Genomic and Proteomic Signatures in Oral Cancer

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ABSTRACT Oral cancer is a public health problem with increasing incidence and mortality rates worldwide. Despite rapid advances in treatment, 5year survival rates have not improved significantly. Major thrust is being laid on diagnosis of the disease in early stages, which is hampered by non-availability of specific diagnostic markers. Advances in genomics and proteomics have made global assessment of expressed genes and proteins in clinical samples feasible. Gene and protein expression profiles derived from clinical specimens have been used to distinguish differences between normal and malignant oral tissues, which are not obvious by clinical, or histologic characteristics. This review focusses on comprehensive analyses of gene expression patterns and proteomic signatures of oral dysplastic lesions and squamous cell carcinomas that have shown considerable promise to improve the discovery of biomarkers for progression of premalignant lesions, prediction of clinical outcome, identification of novel targets for therapy and future directions of molecular signatures of oral cancer in disease diagnosis and therapy.