Cyclin d1 amplification in tongue and cheek squamous cell carcinoma

Type: Article

Abstract:

Introduction: Several molecular markers have been studied for their usefulness as prognostic markers in oral squamous cell carcinoma (OSCC). One such molecular marker is cyclin D1 which is a proto-oncogene located on 11q13 in humans. Objective: To explore the feasibility of using cyclin D1 as a prognostic marker in tongue and cheek SCC by the fluorescent-in-situ hybridization (FISH) method. Methods: Fifty paraffin-embedded samples (25 each of cheek and tongue SCCs) were obtained from the archives of the Oral Pathology Diagnostic Laboratory. Sociodemographic data, histopathologic diagnoses, lymph node status and survival data were obtained from the Malaysian Oral Cancer Database and Tissue Bank System (MOCDTBS)coordinated by the Oral Cancer Research and Coordinating Centre (OCRCC), University of Malaya. The FISH technique was used to detect the amplification of cyclin D1 using the Vysis protocol. Statistical correlations of cyclin D1 with site and lymph node status were analyzed using the Fisher exact test. Kaplan-Meier and Log Rank (Mantel-Cox) test were used to analyze cyclin D1 amplification and median survival time. Results: Positive amplification of cyclin D1 was detected in 72% (36) of OSCCs. Detection of positive amplification for cyclin D1 was observed in 88% (22) and 56% (14) of the tongue and cheek tumors, respectively, where the difference was statistically significant (P=0.012). Lymph node metastasis of cheek SCCs showed a trend towards a significant association (P= 0.098) with cyclin D1 amplification whereas the lymph node metastasis of tongue SCC was clearly not significant (P=0.593).There was a statistically significant correlation between cyclin D1 positivity and survival rate (P=0.009) for overall SCC cases and (P<0.001) for cheek SCC cases. Conclusion: The present study found that cyclin D1 amplification may differ in different subsites of OSCC (tongue vs cheek) and its positive amplification implies an overall poor survival in OSCCs, particularly those arising in cheeks.

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