

Evaluation of IMP3 (Insulin-like growth factor II mRNA binding protein 3) Expression in Oral Squamous Cell Carcinoma, Dysplasia and Hyperkeratosis

Rahro Taban S¹, Ebrahimi M², Mirkeshavarz SM³, Kharazi Frad MJ⁴

¹Assistant Professor, Oral and Maxillofacial Pathology Dept, Faculty of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

²Post Graduate Student, Orthodontics Dept, Tehran University of Medical Sciences, Tehran, Iran

³Post Graduate Student, Oral and Maxillofacial Pathology Dept, Faculty of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

⁴Epidemiology and Biostatistics Dept, Faculty of Public health, Tehran University of Medical Sciences, Tehran, Iran

Abstract:

Background and Aim: Oral squamous cell carcinoma (OSCC) is about 90% of oral cancers. Although, with all development in Oncology, the 5 years survival rate of OSCC remains lower than 50%. Past studies showed that Insulin-like growth factor II mRNA binding protein 3 (IMP3) expresses in cancer cells, but its expression in normal or dysplastic cells is absent or at low level. There are few studies of IMP3 expression in OSSCs and there was no study that compared the expression of IMP3 between OSCC, dysplasia and Hyperkeratosis. In this study, the expression of Insulin-like growth factor II mRNA binding protein 3 (IMP3) in oral Squamous cell carcinoma, dysplasia and hyperkeratosis was evaluated.

Material and methods: In this study we reevaluated 102 slides from the archive of Oral and Maxillofacial Pathology Department of dental school, Tehran University of medical sciences, 34 paraffin blocks of each lesions were selected. An immunohistochemistry study of IMP3 oncofetal protein was performed on paraffin embedded blocks. Two pathologists evaluated the expression of the IHC staining as well. The expression levels were statistically analyzed by Kruskal–Wallis test and dunn test using SPSS ver.22 software.

Results: IMP3 expressions in OSCC was significantly more than Dysplasia and Hyperkeratosis ($p < 0.001$). The difference between IMP3 expression in OSCC grade II, III and OSCC grade I, was statistically significant ($p = 0.002$, $p = 0.013$).

Conclusions: This study showed that IMP3 expression is significantly more than dysplasia and hyperkeratosis. These results suggest that IMP3 has a role in beginning and development of OSCCs. But further investigation is required for the importance of this marker in prognosis and management of it.

Keywords: Oral, Squamous Cell Carcinoma, Dysplasia, Hyperkeratosis, IMP3