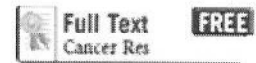


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Toluidine blue staining identifies high-risk primary oral premalignant lesions with poor outcome.

Zhang L, Williams M, Poh CF, Laronde D, Epstein JB, Durham S, Nakamura H, Berean K, Hovan A, Le ND, Hislop G, Priddy R, Hay J, Lam WL, Rosin MP.

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Abstract

There is a pressing need for the development of visual aids that will facilitate the detection of oral premalignant lesions (OPLs) with a high-risk of progression. Preliminary data suggest that toluidine blue stain may be preferentially retained by OPLs with high-risk molecular clones. In this study, we monitored OPLs from 100 patients without any history of oral cancer for an average of 44 months in order to evaluate the association of toluidine blue status with clinicopathologic risk factors, molecular patterns (microsatellite analysis on seven chromosome arms: 3p, 9p, 4q, 8p, 11q, 13q, and 17p) and outcome. Toluidine blue-positive staining correlated with clinicopathologic risk factors and high-risk molecular risk patterns. Significantly, a >6-fold elevation in cancer risk was observed for toluidine blue-positive lesions, with positive retention of the dye present in 12 of the 15 lesions that later progressed to cancer ($P = 0.0008$). This association of toluidine blue status with risk factors and outcome was evident even when the analysis was restricted to OPLs with low-grade or no dysplasia. Our results suggest the potential use of toluidine blue in identifying high-risk OPLs.

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