Why screening and prophylaxis remain to be vital components of oral cancer research?

The advent of molecular biology has led to drastic advancements in cancer therapeutics. Novel treatment protocol customized for individual cases has significantly increased the survival rate among cancer patients. Despite substantial therapeutic progress, there have been increasing reports of treatment resistance.\(^1\) Several causes have been proposed for the development of resistance in cancer cells, with special emphasis given to changes in mutational profile altering the sensitivity of the cancer cells to therapeutic interventions.\(^1\) Although recent studies have shown success in overcoming treatment resistance through next-generation therapeutic agents,\(^2\) cancer cell’s inherent adaptive nature could lead to the development of further resistance. Thus, the question arises as to the future prospect of cancer research. Research focusing on the development of strategies and modalities capable of reducing cancer risk could aid in curbing the growing cancer burden.\(^3\) In cases with avoidable risk factors such as tobacco, alcohol, and areca nut, implementing habit cessation programs and strict product regulation can curb the growing incidence of habit induced cancer.\(^4\) Apart from habits, microbial carcinogenesis is an increasing threat which, in turn, can be prevented by prophylactic vaccination.\(^5\) Individuals working in an environment with potential carcinogens must minimize exposure through protective gear and must regularly undergo screening.\(^6\) In addition, individuals with a genetic predisposition can develop cancer even with minimal risk factors. Thus, identifying such patients, before the development of cancer is vital which can be accomplished by recording a detailed family history of cancer or any cancer-predisposing diseases.\(^7\) Such predisposed individuals may require close monitoring throughout their lifetime. To conclude, given the adaptive nature of cancer against therapeutic modalities, research focusing on developing prophylactic and screening tools remain to be a vital component of cancer research.

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