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Survivin: A Prognostic Biomarker in Oral Squamous Cell Carcinoma (OSCC)

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The incidence of OSCC of the oral cavity is rapidly increasing. Particularly, OSCC turns out to be the most common malignancy of the oral mucosa. Unfortunately, the clinical course of such dreadful lesions cannot be predicted on the basis of histopathology alone. Hence, various biomarkers that can recognize the pathologies with an aggressive phenotype need to be identified [1]. These markers detect cancer and assess the tumor burden.

Apoptosis thus has become a basic tool in the development of anticancer treatment strategies. Recent research has shifted focus towards survivin as a target for cancer therapy. Survivin is one such marker that is expressed in solid & hematological malignancies and is undetectable in normal adult tissues. One study indicates that prognostically low survivin expression showed greater survival rates than moderate or high survivin expression [1].

Dysregulation of apoptosis is a factor responsible for most human diseases & the capacity to sidestep apoptosis is a hallmark of cancer cells [2].

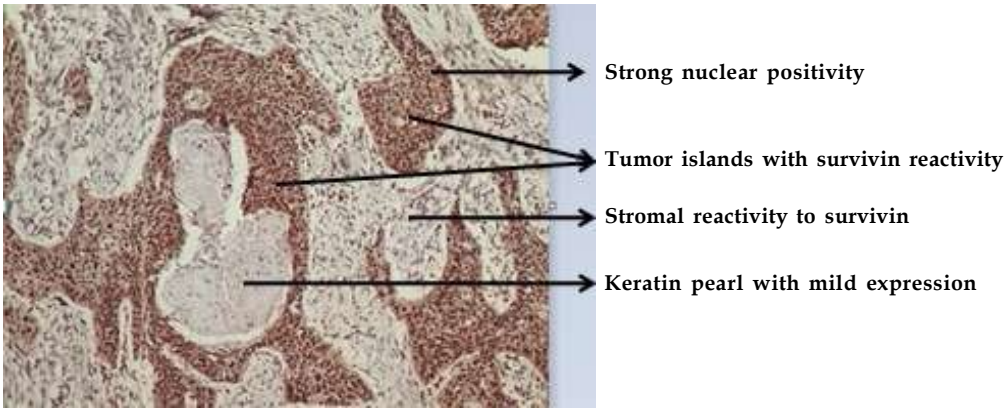
There are numerous evidences which suggest the role of survivin in inhibiting apoptosis & it's co-relation with tumorigenesis & angiogenesis. It has been found that it blocks the cell apoptosis by inhibiting functions of caspase-3 & caspase-7 [3].

The given image is at 40X view of a section of a moderately differentiated OSCC which was stained with the IHC marker (antibody) survivin [Figure 1].

Nuclei that stained positive indicate strong survivin expression pointing at antiapoptotic activity. Moderate staining reaction was also noted in the cytoplasm of the cells as well in the surrounding stroma. Also, the keratin pearls within the tumor islands showed mild reactivity. Various histopathology grades of OSCC can be estimated quantitatively using this biomarker.

We can therefore interpret that survivin - a cancer marker can effectively be used as an apoptotic index and a prognostic indicator in targeting cancer therapy.

Fig.1



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