

Significance of histopathological high risk factors with cell division phosphatases (CDC25A) expression in Retinoblastoma

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Retinoblastoma is the most common intraocular malignant tumor in children. Retinoblastoma remains a therapeutic challenge for pediatric oncologists. Cell division cycle 25 (CDC25) phosphatases are cell cycle regulators and play a pivotal role in controlling cell proliferation during development and tumorigenesis. Overexpression of CDC25A is detected in a number of tumors which implies dysregulation resulting in malignant transformation. However, the role of CDC25A in patients with Retinoblastoma is still unknown. Retrospective analyses of 30 primary enucleated retinoblastoma cases over a period of 2010-2011 were included. Expression of CDC25A protein was performed by Immunohistochemistry in formalin fixed paraffin embedded sections. Cytoplasmic staining was graded as weak/negative (1+), moderate (2+) and strong (3+). Expression of CDC25A was correlated with tumor differentiation and invasion. There were total of 30 patients in which 22 were poorly differentiated retinoblastoma (PDRB) and 8 were well differentiated retinoblastoma (WDRB). Necrosis and calcification was found in 53.3% and 20% respectively. Massive choroidal invasion, optic nerve invasion and sclera invasion was found in 11/30, 14/30 and 2/30 respectively. Immunohistochemistry showed CDC25A expression in 23/30 (76.6%) cases in which 12 had strong and 11 had moderate positivity. CDC25A was more frequently found in 71.4% PDRB, 100% massive choroidal invasion and 78.5% optic nerve invasion. There was statistically significant correlation of CDC25A expression ($P=0.0140$) with massive choroidal invasion. Our results suggest that overexpression of CDC25A plays an important role in the pathogenesis of retinoblastoma. CDC25A was associated with ocular coats invasion and differentiation. CDC25A expression might be useful as a prognostic indicator in patients with retinoblastoma.

Biography

Dr Seema Kashyap is an Additional Professor in the Department of Ocular Pathology, Dr. R. P. Centre, All India Institute of Medical Sciences, New Delhi, INDIA. She has completed her graduation from TNMC Bombay and joined AIIMS as a post graduate in 1992. After completing her MD course in Pathology in 1995, she was a Senior Resident at the AIIMS Pathology department till 1998. Her area of interest is Ocular Cytopathology and Histopathology, Ocular Oncology, Retinoblastoma etc. She has more than 50 publications in international journals.

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