Human papillomavirus in Retinoblastoma: Validation of detection techniques

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Retinoblastoma is the most common primary intraocular childhood malignancy. Earlier studies have suggested an association of HPV with sporadic retinoblastoma, indicating that the virus may have a role in the development of these tumors. Marked variation (0-40%) of HPV positivity in retinoblastoma reported could be due to geographical factors or differences in detection methods used. In this study, presence of HPV in retinoblastoma was detected by various diagnostic techniques. These included PCR (using both MYO9/11 and PGMYO9/11 primers), In-situ hybridization (ISH) and Immunohistochemistry (IHC). These techniques were further validated by reverse hybridization (linear array) which detects 37 genotypes of HPV.

Of the 20 retinoblastoma cases recruited, (16 unilateral and 4 bilateral, mean age of 4 years and M: F ratio 2.3:1), 18 were poorly differentiated (PD) and 2 well differentiated. Optic nerve and choroidal invasion was seen in 15 cases. HPV was detected in 40% (8 cases) using MYO9/11 primers. However, none of the cases were positive for HPV by PGMYO9/11 primers. Of the 8 cases positive by MYO9/11 primers, 6 were positive by IHC and 3 by ISH. However, on validation by linear array none of the 37 genotypes were identified in any of the retinoblastoma cases.

The results of our study show that although PCR is a sensitive technique for HPV detection, PGMYO9/11 primers were found to be more specific then degenerate MYO9/11 primers.

Biography

Ms. Sheetal Chauhan has completed her Ph.D work entitled “Molecular studies and expression of cell cycle regulatory proteins in Ocular Surface Squamous Neoplasia” from the department of ocular pathology, Dr. R.P Centre, All India Institute of Medical Sciences, New Delhi, India. Her work in ocular oncology has been published in reputed international journals and national/international conferences.