



## Brief description of the work done

### Projects running

#### Project title

##### **Analysis of HPV profile in lymph nodes during cervical carcinogenesis.**

Cancer of the uterine cervix (CACX) is one of the most common carcinoma affecting women worldwide. During treatment, histologically lymph node (LN) metastasis and presence of HPV DNA in blood plasma act as a major prognostic factor. Despite the lack of apparent LN involvement, some early-invasive CACX patients have shown recurrences and poor survival. This is suggestive of undetected early dissemination of cancer cells characterized by presence of HPV DNA in histologically non-metastatic LNs which finally progresses into histologically visible metastasis. This present study investigated the status and origin of HPV genome during early dissemination by molecular analysis in primary tumor (PT), histologically non-metastatic pelvic lymph nodes (LNs) and blood plasma (BP) of same patient. First, CACX patients showing signs of early dissemination was identified by detection of HPV in PT (n=22) and their corresponding histologically non-metastatic pelvic LNs (n=45) and BP (n=18) followed by typing of HPV16/18. This was followed by comparative analysis of the physical, copy number and methylation (enhancer/early/late) status of HPV16 genome present in LNs and BP with that of PT. Our study revealed that the HPV16 genome was frequently present in the integrated form, though the copy number was low in both non-metastatic LNs and BP. However, the methylation pattern of PT was discordant with that of corresponding LNs and BP in majority of the cases. Critical assessment of HPV16 profiles established that the presence of hrHPV may be due to the early dissemination of PT cells having significant pathological implications.

Principal investigator

**Dr. C. K. Panda**

## Publications

### Scientific paper

1. Dutta S, Singh RK, Mandal RK, Roychoudhury S, Basu P, Panda CK. Alteration of Human Papillomavirus Type 16 Genetic and Epigenetic Profiles in Cervical Cancer Patients Is Indicative of Poor Disease Prognosis: A Cohort Analysis. *Int J Gynecol Cancer* 26(4):750-757, 2016.