SUMMARY AND CONCLUSIONS

Application of the most sensitive technique of polymerase chain reaction (PCR) has led to the detection of the high risk oncogenic human papillomavirus type 16 in about 30% (27 out of 89) of a population of asymptomatic normal women. The frequency of HPV 16 in invasive carcinoma was found to be as high as 97.6% (81 out of 83). Human papillomavirus type 11 which is known to be responsible for causing benign cervical lesions was found in (7 out of 89) 8% non-suspect normal women while its frequency in invasive carcinoma is extremely low 6% (5 out of 83).

Study of genetic alterations/amplifications in c-myc oncogene in cases of invasive cancer and dysplasias indicated:

(I) that the 3-5 fold amplification of c-myc loci along with presence of high copy number of human papillomavirus was found in about 31% of cervical cancer cases whereas 1 of 13 dysplasia cases (mild and moderate) was found to have 2-3 fold amplification in c-myc locus.

(II) that the alteration in c-myc oncogene in terms of rearrangements as revealed by restriction fragment length polymorphism (RFLP) shows presence of a non-germline extra 5.2 kb band in terminal cases of invasive cervical cancer.

The human ras gene family which includes the homologous, Ha-Ki- and N-ras genes, is one of the potential targets for mutational changes that play a role in human tumorigenesis. Observation of absence of mutations by direct sequencing and dot blot hybridization in presence of Tetra methyl ammonium chloride (TMACl) of the PCR products of cervical cancer DNA samples led us to conclude that point mutations in codon 12,13 and 61 do not seem to be active in development of cervical cancers.

A preliminary study on the antiviral effect of the Praneem poyherbal cream has provided interesting results in a small group of twelve patients where regression of cervical lesions could be observed in seven
patients by clinicians and DNA analysis showed disappearance of human papillomavirus infection in cervicovaginal smear samples of patients following intravaginal application of the Neem cream.

It is therefore suggested that early typing of HPV by PCR would allow identification of high risk population and use of Praneem polyherbal cream in such cases could be beneficial in reducing the number of HPV-infected women who may progress on to severe dysplasia or invasive cancer.