



Cancer of the uterine cervix continues to be a serious public health threat of global importance; 273,500 women are estimated to be dying from it annually. According to WHO reports, the age adjusted incidence rate of cervical cancer in Ethiopia and Sudan are 35.5 and 19.02 per 100,000 population respectively. Molecular and epidemiological studies have shown that Human Papilloma virus (HPV) is considered as the etiological agent for cervical cancer. Designing an effective vaccine against oncogenic HPV genotypes could have immense impact on the global cervical cancer burden. It was shown that a person protected against a specific type of HPV would still be at risk of getting infected with other cancer-inducing HPV genotypes. This necessitates that individuals living in different geographical localities receive vaccines based on the specific genotypes prevalent in that particular area.

A retrospective molecular analysis for Human Papilloma virus was done on 245 formalin fixed paraffin embedded cervical biopsy samples bearing different histopathologic abnormalities that were collected from Ethiopia and the Sudan (160 and 85 samples respectively). The median age of the women who had given the biopsy samples were 45 and 48 (Range: 21-85; 30-75) for samples collected from Ethiopia and the Sudan respectively. DNA was extracted using phenol-chloroform extraction method and PCR was done to amplify the house keeping gene, β -globin, with PCO4, GH20 primers. Institutional ethical clearance was obtained from AHRI/ALERT, Addis Ababa University and Institute of Endemic Diseases ethical review committees.

Amplification of HPV and subsequent genotyping was done on samples that were positive for the housekeeping gene using SPF10 primers and Line Probe Assay (LiPA) respectively. Accordingly, 93% (149/160) and 94% (80/85) of samples collected from Ethiopia and Sudan respectively were positive for HPV DNA. High risk (HR-HPV) and Low risk (LR-HPV) HPV genotypes were identified from 93% (149/160) and 13% (21/160) of all samples collected from Ethiopia respectively. Among the samples collected from Sudan, 94% (80/85) harbored high risk and 11.7% (10/85) low risk HPV genotypes. Low risk HPV genotypes were detected as part of a mixed infection with at least one other HR-HPV type in both groups.

HPV 16 was found to be the most frequent HPV genotype in Ethiopia and the Sudan accounting for 91% (136/149) and 82.5 % (66/80) respectively. Next to HPV 16, HPV 52, 58 and 18 were the second, third and fourth common HPV genotypes identified in Ethiopia. On the other hand, HPV 18, 45 and 52 were the second, third and fourth HPV genotypes identified in samples collected from Sudan.

Mixed infections mainly composed of HPV 16, 18, 31, 33, 35, 45, 52, 58, and 68 were observed from samples collected from the two countries. Multiple infection with more than one HPV genotypes were identified in 59% (88/149) samples positive for HPV genotypes from Ethiopia and among 49% (39/80) HPV positive samples from the Sudan. The trend of having multiple genotypes reached to its highest peak in the age group 41- 60 and declined after the age 60 in samples



collected from the two countries.

It is recommended that a wide population-based epidemiological study be conducted to define the exact picture of this disease. A suitable vaccine targeting mainly HPV 16, 18, 45, 52 and 58 will have substantial impact on cervical cancer control in the two countries.