SUMMARY

A study carries for the last twenty years accumulated data that show two different etiologies of head and neck squamous cell carcinoma. Tumors located in the oral cavity are often independent of the viral infection and are associated with tobacco and alcohol use. Approximately 26% of all HNC and more than 50% of tonsillar cancers are associated with the presence of high risk human papillomavirus (HR HPV). The purpose of this study was to determine whether changes in HPV DNA prevalence in oral rinses and/or HPV-specific antibody levels in sera of patients with head and neck carcinoma (HNC) have prognostic significance.

Patients with HNC were enrolled (N=142). The presence of HPV DNA was assayed in tumor tissue and oral rinses, and HPV-specific antibodies were assessed in sera. Sera were drawn one month and one year after the end of treatment. One year after treatment, oral rinses were collected. Altogether, 59.2% tumors were HPV positive. Initially, the presence of HPV DNA in the tumors strongly correlated with HPV DNA positivity in oral rinses as well as with the presence of HPV-specific antibodies in sera. Out of 66 patients with HPV positive oral rinses at enrollment, 84.8% became negative at one-year follow up. The mean titres of HPV 16 E6 and E7 antibodies at follow-up were lower in comparison to those at enrollment; the differences were statistically significant. This was not the case for antibodies specific for HPV16 VLPs. Out of 16 patients with recurrences on follow-up (alive at the time of second sampling), six were positive at enrollment for HPV 16 E6 and/or E7 antibodies. In five of these, no decrease in antibody levels was observed. Patients with HNC cleared HPV infection in oral rinses after treatment while they sustained their seropositivity for HPV 16 E6/ E7. All markers of HPV infection at enrollment were predictive of better survival and lower frequency of recurrence while no markers were predictive at follow-up.

Our data suggests that the detection of seropositivity for HPV–specific antibodies to the HPV 16 E6 and E7 oncoproteins may serve not only as a marker of the HPV viral etiology of HNC, but also of the prognosis of recurrence in these patients.