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Role of HPV infection and integration in cervical cancers in Saudi Arabia

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The involvement of HPV infection in invasive cervical and oropharyngeal cancers in Saudi patients is not fully defined. The aim of this study was to determine the distribution of HPV infections and genotypes in these cancers and potential HPV integration based on the assumption that in invasive tumors, the viral DNA is integrated into the host genome. Since integration often disrupts the *E2* gene, the assay is based on the quantification of *E6* relative to *E2* DNA quantified by qRT-PCR technique. Paraffin-embedded tumor samples from more than 400 patients treated for cervical (n=213), H&N (n=200), were examined. Age of patients ranged between 28 and 106 years old. HPV was detected in 160 cervix and four oropharyngeal cancer patients (75% and 2% respectively). Seven different single HPV genotypes (16, 18, 31, 45, 56, 59, 73) and five double infections (16/18, 16/39, 16/70, 35/52, 45/59) were detected. The most common genotype was HPV-16 (71%), followed by 31 (7%), and 18, 45, 73 (4% each). Testing HPV integration in 81 cervical cancers indicated that about one-third of samples have highly integrated HPV-16 in the host genome. We conclude that the rate of HPV infection (75%) is lower for cervix cancer and much lower (2%) for oropharyngeal cancers of what has been estimated worldwide (85-99% and 25%-36%, respectively). HPV 16 and 18 were the most common genotypes. Therefore, current HPV vaccines are expected to protect more than two-third of cervical cancer women in Saudi Arabia.

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Indicating patients with breast cancer using infrared thermography

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Early detection of breast cancer involves two questions: the early diagnosis and screening. In the early diagnosis the first signs and symptoms of cancer are recognized by the patient or health professional before the advance of the disease. On the other hand, screening tests are performed in asymptomatic individuals in order to identify those with abnormalities suggestive of breast cancer before any symptoms and/or sign of this disease. Screening is divided into two types: the opportunistic and the organized. In opportunistic screening, tests are requested unsystematically in routine consultations whereas in organized screening, tests are ordered systematically to a population at risk, the target population, within a structured program. One of the tests used in screening is mammography. Considered the gold standard, mammography reduces by approximately 30% mortality rate. But mammography equipment forms the image by radiation of the breast, and each time the breast is exposed to X-rays, the risk of cancer increases by 2% and premenopausal breast is even more sensitive to radiation. Because of the difficulty to obtain access to the most appropriate screening test for breast cancer, the mammography, especially for women with low levels of education and socioeconomic status, it is necessary to define precisely the target population for an organized screening program. In this sense, the thermography has been considered a promising method of screening for the detection of breast cancer, for generating images which reveal the distribution of temperature on the surface of both breasts.

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