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HUMAN PAPILLOMAVIRUS INFECTIONS IN A ROMANIAN AMBULATORY GYNECOLOGICAL WARD

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BACKGROUND
Human papillomaviruses (HPV) are a large family of small double-stranded DNA viruses that infect squamous epithelia. Human Papillomavirus (HPV) high-risk (HR) types are the causal factor for cervical cancer and premalignant dysplasia. Taking into account the heterogeneity of HPV types across and within populations this study aims to assess the HPV frequency in Romanian women.
OBJECTIVE
The objective of this retrospective study is to show the prevalence of cervical genital infections with high-risk cancer causing HPV serotypes in the gynecology ward of "VICTOR BABES" DTC over a period of 22 months (May 2009 - February 2011).
MATERIAL AND METHOD
Throughout the testing period, 251 patients were sampled for cervical secretion samples, which presented for tests upon request or with a recommendation for cytological modifications. The patients examined were aged between 16 and 59 years.
All samples were examined with LINEAR ARRAY HPV genetic typing test.
RESULTS
Of all 251 tested patients, 135 were found to be HPV negative and 117 HPV positive. We identified 31 HPV serotypes out of which 18 were high-risk cancer causing serotypes (16,18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 62, 67, 68, 73, 82, IS 39), 3 serotypes classified as having a potential oncogenic risk (53, 66 si 84) and 10 serotypes (6, 11, 42, 54, 55, 61, 72, 81, 83 and CP6108) without an oncogenic risk.
The global frequency of high-risk cancer causing HPV serotypes, either alone or in combination, was 85,5% (100/117, Fisher test, p<0,0001-es ; OR=1556,3, CI :92,428-26205), and that of serotypes with a low oncogenic risk was 14,5% (17/117, Fisher test, p<0,0001-es ; OR=47,189, CI :2,803-794,57).
In our study, the prevalence of high-risk cancer causing HPV serotypes is the following in descending order: 16; 53; 18; 52; 31; 66, 73; 45, 58, 84; 33, 51; 35, 68, 82; 39, 59, 62; 56, 67;IS39.
In 41,8% of cases (49/117; Fisher test, p<0,0001-es, OR=195,83, CI:11,890-3225,5) multiple associations have been found.

According to the phylogenetic classification, we noticed the increased prevalence in associations of serotypes included in alpha-9 group (16, 31, 33, 35, 52 si 58) and serotypes not included in alpha-9 or alpha-7 (53, 66, 73, 84).
The overall prevalence of HPV serotypes infection (with high and low oncogenic risk) was -52.1% (61/117, Fisher test, p<0,0001- es, OR=294,98, CI:17,920-4855,7) in the group age ranging from 21 to 30 years

-34.1 % (40/117, Fisher test, p<0,0001- es, OR=141,62, CI:8,582-2337) in the age group ranging from 31 to 40 years

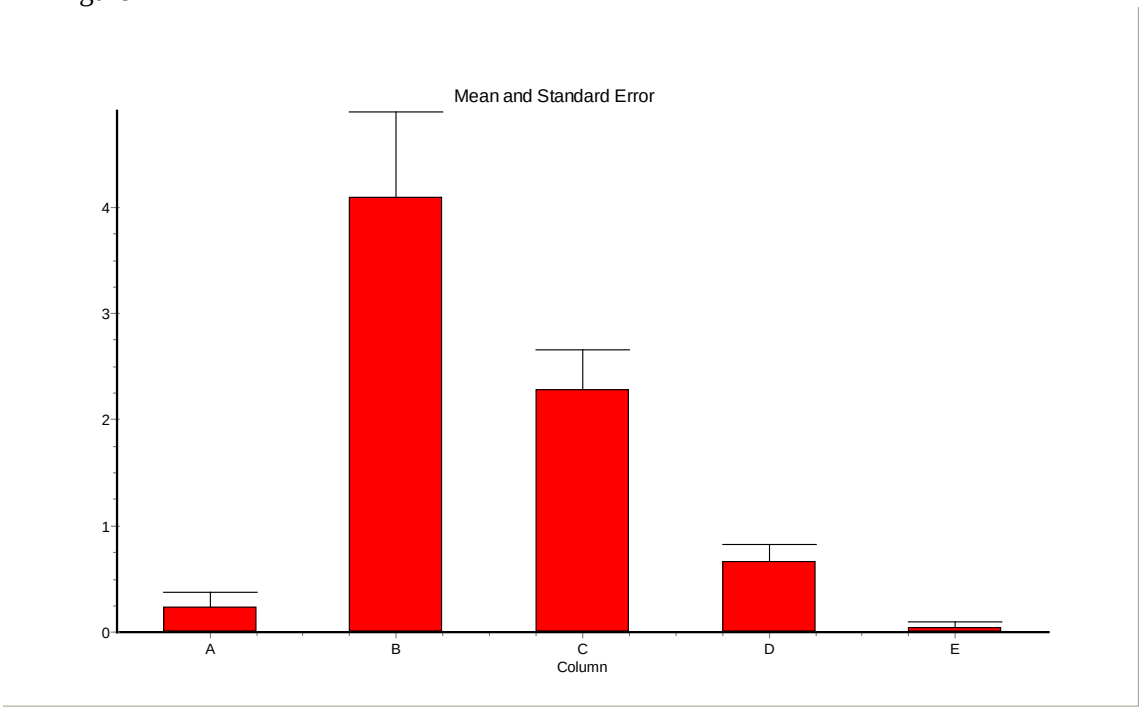
-8.5% (10/117, Fisher test, p=0,0004 - es, OR=26,470, CI:1,533-457,15) in the age group ranging from 41 to 50 years

-3.4% (4/117, Fisher test, p=0,0452 - s, OR=10,744, CI:0,5720-201,84) for ages under 20 years

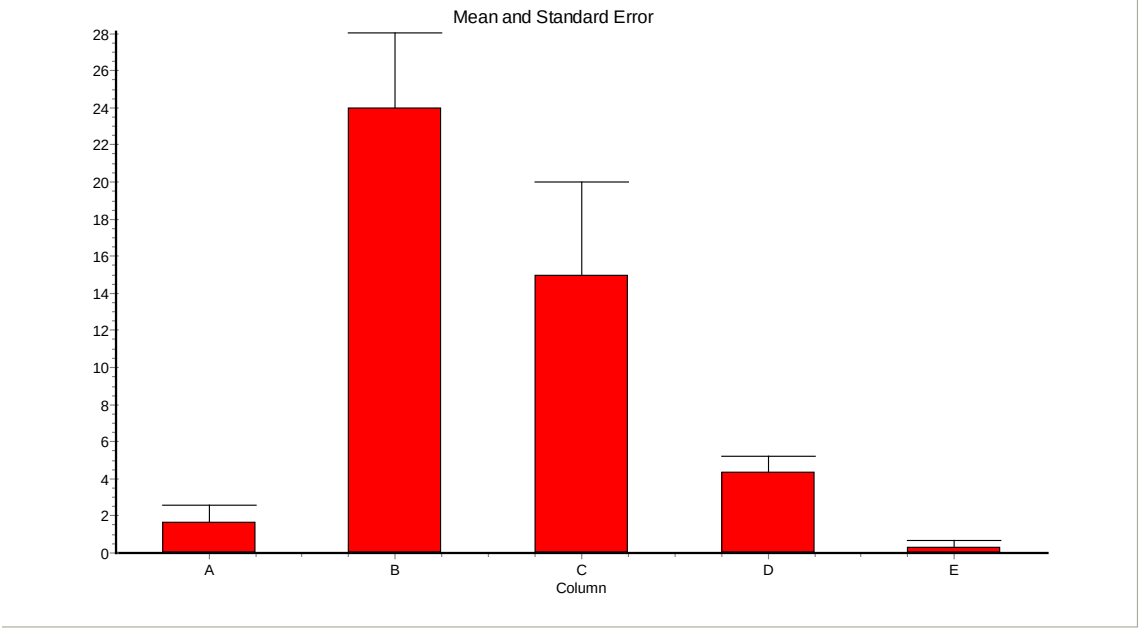
-1.7% (2/117, Fisher test,p=0,2146 - ns) for ages over 50 years.

The comparison between infections with high oncogenic risks in patients included in the study showed an extremely significant difference in the distribution by age groups (Kruskal-Wallis test, Nonparametric ANOVA, p<0,0001- es, KW=55,199) Figure 1

Figure 1



Separate comparison of alpha-7 (HPV18, 39, 45, 59, 68 and 70) and alpha-9 (HPV16, 31, 33, 35, 52, 58 and 67) infections with serotypes with high oncogenic risk and infections with other highly oncogenic types (53, 66, 73, 84) showed a significantly different distribution by age groups (Kruskal-Wallis test, Nonparametric ANOVA, p=0,0127 - s, KW=12,728) Figure 2



Of all 117 cases with HPV infection, 29,9% (35/117) did not show cytological modifications, and 26,4% (31/117) showed cytological modifications as follows: 9,4% (11/117) – ASCUS cytological smears; 11,1% (13/117) – L-SIL cytological smears; 3,4% (4/117) – H-SIL cytological smears; 2,5%(3/117) –ASCH cytological smears.
The frequency of serotypes with high oncogenic risk associated with modified cytology is the following: 25,8% (8/31) for HPV 16; 19,3% (6/31) for HPV 52 and 53; 12,9% (4/31) for HPV 31, 51 and 58; 9,6% (3/31) for HPV18, 33 and 66.
We notice the high frequency that HPV serotypes with high oncogenic risk of group alpha-9 and those not included in alpha-7 and alpha-9 have in the modified cytological smears. The prevalence of infection associated with cytological modifications for serotypes with high oncogenic risk belonging to group alpha-7 (HPV 18, 39, 45, 59, 68 and 70) and alpha-9 (HPV 16, 31, 33, 35, 52, 58 and 67) is statistically significant (Fisher test, p=0,0382 - s, OR=0,2338,CI:0,05831-0,9371 for alpha-7, and p<0,0001 - es, OD=12,037, CI:3,735-38,787 for alpha-9). We did not find a statistically significant prevalence for serotypes not included in groups alpha-7 and alpha-9 (HPV 53, 66, 73, 84) (Fisher test, p=0,7886 - ns).
Differences in frequency of HR HPV types were found for presence of cervical lesions: HR- types 31, 52, 53,followed by HR-types16, 58, 68, 35, 51, 66, 73 in ASCUS; HR-types 53, 16, 33, 51, 52, 66, 18, 31, 58 in L-SIL and HR-types 16,18 in H-SIL, ASCH.
CONCLUSIONS
Compared with studies from other countries, our data indicated differences in frequency of HR-HPV type infection, an association of HR-types HPV 16, 52, 53, 31, 51, 58, 18, 33, 66 and cervical lesions, and a trend for distinct distribution of HPV types by age.