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OBJECTIVES

95–99% of patients with invasive cervical cancer are positive to human papilloma virus (HPV). The objective of the current study was to evaluate the incidence of Low Risk (LR-HPV) types among women with Cervical Intra-epithelial Neoplasia 2-3 (CIN 2-3) and cervical cancer (CC).

MATERIALS AND METHODS

We conducted a nested cohort study of patients diagnosed with CIN 2-3 or CC from May 2008 until October 2017

RESULTS

We collected clinical data on 608 women of whom 402 were with CIN 2-3 and 206 with diagnosis of cervical cancer (CC). Of patients with CIN 2-3, 90.3% were found positive to at least one type of HR-HPV, compared to 89.3% of CC patients. 4.5% of patients with CIN 2-3 and 3.9% of those with CIN2-3 were positive to only one LR-HPV, or to some of a few LR-HPV types. Among 5.2% with CIN 2-3 and 6.3% of those with CC no HPV types were detected.

Table 1:
HPV types among High SIL and cervical cancer patients

	High SIL (n=402)	Cervical cancer (n=206)
HR-HPV single	276 (68.7%)	164 (79.6%)
Multiple strains	86 (21.4%)	21 (10.2%)
HR HPV-16, 18	229 (57%)	130 (63.1%)
HR HPV- 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68	132 (32.8%)	54 (26.2%)
LR HPV-6, 11, 26, 32, 40, 42, 44, 53, 54, 55, 61, 62, 64, 67, 70, 72, 73, 82	19 (4.7%)	6 (2.9%)
Negative	21 (5.2%)	13 (6.3%)
Unknown	0 (0%)	2 (1%)

Table 2:
HPV type by age group in the population of northern Israel

HPV type	High SIL						Cervical cancer					
	<25	25-29	30-34	35-54	54>	Total	<25	25-29	30-34	35-54	>54	Total
HR HPV	12 (3%)	67 (19%)	90 (26%)	158 (46%)	20 (6%)	347	0	7 (4%)	14 (8%)	92 (52%)	63 (36%)	176
HR-16, 18	7 (3%)	52 (23%)	60 (26%)	98 (43%)	11 (5%)	228	0	6 (5%)	11 (9%)	69 (55%)	40 (31%)	126
LR	1 (3%)	6 (18%)	4 (12%)	17 (51%)	4 (12%)	32	0	0	4 (33%)	3 (25%)	5 (42%)	12
Negative	0	1 (4.7%)	3 (14%)	15 (71%)	2 (9%)	21	0	0	1 (6%)	5 (30%)	10 (74%)	16
Unknown	0	0	0	0	1	1	0	0	0	3	1	4

CONCLUSION

- The prevalence of the LR-HPV is low but it could not be ignored due to the expected decrease in CC caused by HPV types that are included in the bi-, quadri-, and nano-valent vaccine.
- The CIN 2-3 and CC patients with LR-HPV types and with negative HPV challenging the sensitivity of HPV screening that is based a limited number of HR-HPV types.