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Awareness and knowledge of pneumococcal vaccination in cardiology outpatient clinics and impact of physicians' recommendation on vaccination rates

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Background: Although there is not enough data on pneumococcal vaccination status in patients with cardiovascular disease and or risk factors in our country, it is known that vaccination rates are quite low in the current data.

Purpose: We aimed to evaluate the awareness of pneumococcal vaccination (PCV13, PPSV23) in general cardiology outpatient clinics and impact of physician's recommendation (with educational brochures) on vaccination rate.

Methods: Awareness of vaccination, before COVID-19 pandemic, was measured in patients admitting to cardiology outpatient clinics from 40 center of our country by a questionnaire contained 19 questions. The demographics (including gender, age, educational level, awareness vaccination level) and comorbidities were obtained. The vaccination rates were calculated within 3-months follow-up from the admitting of patient to cardiology clinics.

Results: The 403 (18.2%) of patients with previous pneumococcal vaccination were excluded from the study. The mean age of study population (n=1808) was 61.9 ± 12.1 years and 55.4% were male. The 58.7% had coronary artery disease, hypertension (74.1%) was the most common risk factor and 32.7% of the patients had never been vaccinated although they had information about vaccination before. The 98.5% were referred to family medicine (n=1412, 78.1%) or vaccination outpatient clinics (n=370, 20.5%) and the vaccination rate was 62.1% during the follow-up period. The differences between vaccinated and not-vaccinated patients are presented in Table 1.

The physician's recommendation was positively correlated with vaccination intention and behavior in our participants. Multivariate logistic regression analysis showed a significant between vaccination and female sex [OR=1.55 (95% CI=1.25–1.92), $p < 0.001$], higher education level [OR=1.49 (95% CI=1.15-1.92), $p = 0.002$] patients' knowledge [OR=1.93 (95% CI=1.56-2.40), $p < 0.001$], and their physician's recommendation [OR=5.12 (95% CI=1.92-13.68), $p = 0.001$].

Conclusion: To our knowledge this is the first report about the awareness pneumococcal vaccination rates and impact of physician's recommendation in patients with cardiovascular disease by high study population. These findings suggest providing information on the benefits of vaccination by physician's and educational advice was significantly associated with an increase vaccination rate and have a key role.

33.3 - Secondary Prevention

	Vaccinated N=1122 (%)	Not-vaccinated N=587 (%)	All N=1808	p
Gender				
Male	592 (63%)	347 (37%)	939	0.009
Female	528 (69,1%)	236 (30,9%)	764	
Age (Mean ± SD)	61.6±11.8	62.3±11.9	1690	0.234
Coronary artery disease	626 (62.3%)	379 (37.7%)	1005	<0.001
Hypertension	821 (65.2%)	438 (34.8%)	1259	0.652
Education level				<0.001
Non-literate	253 (57.9%)	184 (42.1%)	437	
Primary-secondary school	566 (66.8%)	281 (33.2%)	847	
High school	230 (75.4%)	75 (24.6%)	305	
University	71 (62.3%)	43 (37.7%)	114	

Table 1

	Vaccinated N=1122 (%)	Not-vaccinated N=587 (%)	All N=1808	p
Do you have information about the pneumonia vaccine?				<0.001
No	723 (64%)	407 (36%)	1130	
Yes (Whom)				
Physician	110 (83.3%)	22 (16.7%)	132	
Nurse/Other healthcare worker	60 (73.2%)	22 (26.8%)	82	
Media, TV, Magazine	126 (62.4%)	76 (37.6%)	202	
Close friends	91 (72.8%)	34 (27.2%)	125	
Other	10 (31.3%)	22 (68.8%)	32	
Do you know the flu and pneumonia vaccine are different?				0.002
No	679 (63%)	398 (37%)	1077	
Yes	441 (70.4%)	185 (29.6%)	626	
Opinion on pneumonia vaccination				<0.001
Very useful	225 (71.2%)	66 (20.9%)	291	
Partially useful	301 (68.4%)	117 (26.6%)	418	
Doesn't think it's effective	103 (61.3%)	59 (35.1%)	162	
Doesn't have any idea	465 (57%)	301 (36.9%)	766	
Thinks it's harmful	25 (38.5%)	38 (58.5%)	63	

Table 2