

Status of influenza vaccination in patients presenting to two neighborhood primary health care clinics in Antalya

Stato vaccinale anti-influenzale dei pazienti afferenti presso due ambulatori pubblici di quartiere in Antalya (Turchia)

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INTRODUCTION

Worldwide, annual outbreaks of influenza result in widespread illness, causing deaths in the elderly and young, social disruption, and a substantial economic burden to society and the individual [1]. Influenza is a major cause of morbidity and mortality worldwide, particularly in the elderly and in persons with underlying diseases. According to the World Health Organization (WHO), every year, 5-15% of the world's population suffer from upper respiratory tract infections due to influenza. Annual influenza epidemics are causing between 250,000 and 500,000 deaths worldwide [2]. Today vaccination is accepted as the most effective method of decreasing the effect of influenza, particularly in high risk groups [3]. Research has also demonstrated that there are economic benefits to the protection provided by the influenza vaccine. Even when high risk individuals who have been vaccinated still get the influenza illness the vaccination is effective in preventing lower respiratory involvement and secondary complications, and also effective in decreasing hospitalizations and all risks [4-6]. In a research study by Nichol, Nordin, and Mullooly (2003) with 148,000 people influenza vaccination was observed to decrease the possibility of hospitalization for cardiac insufficiency by 19% and for stroke by 23% [7].

The Advisory Committee on Immunization Practices (ACIP) recommends that the influenza vaccination must be given to high risk groups and to secondary risk groups and other specific groups that have been determined [8]. Included who are those over 65 years and infants between 6-23 months.

The "cost effectiveness" of the influenza vaccine has been emphasized by the American Academy of Family Physicians, who recommend that the vaccination age be decreased to 50 [9]. Most countries recommend influenza vaccination for elderly persons and those with high-risk medical conditions (cardio-pulmonary diseases, diabetes mellitus, renal diseases, long-term aspirin use for children, pregnant women, HIV/AIDS), and including those who are immunocompromised. Fewer countries have provided public reimbursement for vaccination through national or social health insurance [10].

In 2003, the countries with the highest levels of vaccination (doses distributed/1000 population) were Canada (344), the Republic of Korea (311), the United States (286), Japan (230) and Turkey [10, 19]. There is limited information about the status in risk groups in Turkey. According to newspaper reports approximately one million doses of influenza vaccine are imported annually for Turkey, where the popula-

tion is 70 million [11]. There are no detailed studies about the status of risk groups in Antalya.

Taking action from all of this information, this study was conducted for the purpose of determining the status of influenza vaccination in patients who presented to two of the neighborhood primary health care clinics in Antalya's province center.

PATIENTS AND METHODS

This descriptive type of research was conducted between 15th and 31st March 2006 at Antalya's Primary Health Care Clinic Number 9 and Number 16. Data were collected from 739 individuals at Primary Health Care Clinic Number 9 and 755 from Number 16 for a total of 1494 individuals. The plan was to interview everyone

Table 1 - Vaccination status according to some demographic characteristics of research participants (n=1494)

Age	Vaccinated		Not vaccinated		Total		Test Results
	N	%	N	%	N	%	
0-9	8	5.2	145	94.8	153	10.2	X ² =21.68 P<0.001
10-19	7	6.7	98	93.3	105	7.1	
20-29	9	3.2	272	96.8	281	18.8	
30-39	17	6.4	248	93.6	265	17.7	
40-49	19	8.4	207	91.6	226	15.1	
50-59	20	8.6	213	91.4	233	15.6	
≥60*	31	13.4	20	86.6	231	15.5	
Gender							
Male	51	7.9	598	92.1	649	43.4	X ² =0.31
Female	60	7.1	785	92.9	845	56.6	P>0.05
Education Status (n = 1368)							
Illiterate/Literate	7	4.9	35	95.1	142	10.4	X ² =17.86 P<0.01
Primary school	32	6.7	445	93.3	477	34.9	
Middle school	9	4.3	202	95.7	211	15.4	
High school	32	9.5	306	90.5	338	24.7	
University*	28	14.0	172	86.0	200	14.6	
Marital status							
Married	81	7.8	951	92.2	1032	69.1	X ² =0.85
Single	30	6.5	432	93.5	462	30.9	P>0.05
Occupation							
Laborer	2	1.6	120	98.4	122	8.2	X ² =44.29 P<0.001
Tradesman	2	3.0	64	97.0	66	4.4	
Retired	21	12.8	143	87.2	164	11.0	
Civil servant*	18	20.0	72	80.0	90	6.0	
Peddler, seasonal worker	17	8.2	189	91.8	206	13.8	
Unemployed	3	7.9	35	92.1	38	2.5	
Farmer	-	0.0	24	100.0	24	1.6	
Housewife	32	6.3	479	93.7	511	34.2	
Child, student	16	5.9	157	94.1	273	18.3	
Health insurance							
Yes	109	7.9	1270	92.1	1379	92.3	X ² =5.87
No	2	1.7	113	98.3	115	7.7	P<0.025
Risk							
Yes*	52	14.9	297	75.1	349	23.4	X ² =36.95 P<0.001
No	59	5.2	1086	94.8	1145	76.6	
Primary Health Care Clinic							
Number 9	20	2.7	719	97.3	739	49.5	X ² =47.44
Number 16	91	12.1	664	87.9	755	50.5	P<0.001

who came to the clinic for treatment or follow-up during the aforementioned dates. The prepared questionnaire was completed by means of face to face interviews with patients in the waiting room by Akdeniz University Medical Faculty intern physicians. Prior to conducting the research, the patients were informed that their identity would be kept confidential and the information obtained would only be used for scientific purposes. Individuals who did not want to answer the questions were not interviewed. Information about infants and children was obtained from their parents.

The risk groups who need to be vaccinated were recommended in 2002 by ACIP [8]. After the questionnaire was completed education was given to the research group about the influenza vaccination. Data obtained were loaded on the computer and evaluated using the SPSS program. $P < 0.05$ was accepted as a significant.

■ RESULTS

The vaccination status of patients according to various sociodemographic characteristics are shown in Table 1. The mean age of the patients was 35.9 ± 9.5 years, 10.4% had not completed primary school, 34.2% were housewives, 69.1% were still married and 7.7% did not have any kind of health insurance. As it can be seen from the table, the rate of influenza vaccination was

statistically different according to the age groups, educational level, occupation, health insurance and risk factor status. The vaccination rate for those in the 50+ age group was 11.2%, and for the 65+ age group was 16.3%. The rate of vaccination was found to be higher at a statistically significant level for those 60+ years ($p < 0.001$), for university graduates ($p < 0.01$), for civil servants ($p < 0.001$), for those with health insurance ($p < 0.025$) and for those with any kind of health risk ($p < 0.001$). A significant difference for the vaccination rate was found between the two primary health care clinics ($p < 0.001$).

Within the last month 24.6% (368 people) of the research participants had the influenza illness. Only 7.4% (111 people) of the research group had received the influenza vaccine.

The distribution of cases that create a life-threatening risk for influenza and the vaccination status are shown in Table 2. The risk group with the highest rate of vaccination (27.3%) was the COPD patients. There were 349 people (23.4%) with some kind of risk in the research group and their rate of vaccination was 14.9%. There were no 6-23 month old infants who had been given the influenza vaccination although this age group is considered to be a risk group.

When the 111 individuals who had been given the influenza vaccine were asked who had recommended that they receive it, 28.8% (32 people)

Table 2 - Influenza vaccination status according to research participants' risk factors.

Risk factors	Vaccination status				Total* (n=1494)	
	Vaccinated		Not vaccinated			
	N	%	N	%	N	%
Age group (>65 years)	23	16.3	118	83.7	141	9.4
Diabetes Mellitus	22	13.4	142	86.6	164	11.0
Chronic Cardiopulmonary Disease	27	21.3	100	78.7	127	8.5
Asthma	9	18.0	41	82.0	50	3.3
COPD	6	27.3	16	72.7	22	1.5
Cancer	1	6.7	14	93.3	15	0.9
Pregnancy	1	7.1	13	92.9	14	0.9
Chronic Renal Insufficiency	-	-	6	100.0	6	0.4
Others	1	12.5	7	87.5	8	0.5
6-23 month infant	-	-	30	100.0	30	2.0
*Line percentage						

Table 3 - Characteristics of vaccination procedure of the research participants who were vaccinated (n =111).

Characteristics	N	%
Who recommended to you that you be vaccinated?		
Myself	32	28.8
Doctor	31	27.9
TV-Newspaper	14	12.6
Pharmacist	12	10.8
My children	9	8.1
Work	6	5.4
Health clinic personnel	5	4.5
My friends	2	1.8
Where did you have the vaccination given?		
At the pharmacy	53	47.8
At the health clinic	33	29.7
At the hospital	14	12.6
At work	6	5.4
At home	5	4.5
Who paid for the vaccination?		
Myself	97	87.4
Employer	6	5.4
Retired Civil Servant Insurance	5	4.5
Independent Business Insurance	2	1.8
Social Health Insurance	1	0.9

ple) stated that they made the decision themselves and 27.9% stated that their physician had recommended it (Table 3). The most common place where to have the vaccination given was a pharmacy (47.7%), followed by the primary health clinic (29.7%). The majority (87.4%) of those who received the vaccine paid to get it.

DISCUSSION

In this study a rate of 7.4% for influenza vaccination was found for all groups. The rate of receiving influenza vaccination for those at a risk group was 14.9%. This is a low rate for immunization success. However those with health risks had been vaccinated at a significantly higher rate than those without risks.

The highest rate of immunization was 27.3% of the COPD patients, followed by those with chronic cardiopulmonary disease and asthma. In a study by Ozol with 95 COPD patients it was determined that 33.7% had been vaccinated within the last year [12]. In a study conduct-

ed in Spain with cardiovascular disease patients the rate of vaccination was 51.73% but the rate was 87.2% for those with COPD [13, 14]. Influenza vaccine is effective in reducing mortality and morbidity in patients with underlying cardiovascular disease at any age and reducing hospital admissions among these patients during influenza epidemics [13].

In the 65+ age group the rate of influenza vaccination was 16.3%. This rate is very significant for showing the level of vaccination in the study group. In a study conducted in Hong Kong the rate of immunization against influenza in the 65+ age group was found to be 31.2%, 65.6% in the US [15, 16].

On the other hand it was observed that none of the risk group of 6-23 month old infants in this study had been vaccinated against influenza. In a study by Ozgur et al. with 6-60 month old infants those who had been given the influenza vaccine had lower rates of acute otitis media, otitis media with effusion and total otitis media episodes [17].

In the study by Ozol et al. [12] it was seen that as the educational level of the public increases, the rate of vaccination also increases. Other significant factors, including socio-demographic factors (higher income, higher educational level, etc.) and health-related factors (presence of co-morbidities, self-perceived poor health, having visited a physician in the last year, fear of side effects, etc.), were found to be associated with higher prevalence of influenza vaccination [15]. There were also similar findings in this study. For this reason we are of the opinion that increasing society's level of education will have an important part in increasing the level of health as well.

A statistically significant difference was found between the two primary health care clinics on the subject of vaccinations. The reason for this may be because of the socio-cultural differences between the two regions covered by these two clinics. The people living in the region covered by Primary Health Clinic Number 16 have higher educational and income levels. Primary Health Clinic Number 9, however, is a clinic frequented by those living in shanty type homes next to the small industrial site.

Of those who had been vaccinated against influenza, 28.8% had made the decision to be vaccinated themselves and 27.9% had been vaccinated as a result of a physician's recommendation. However it was expected that the rate of vaccination based on physician recommenda-

tion would be higher. Just as, in a study conducted in Germany a correlation was found between physician's recommendation to receive influenza vaccine and a high rate of vaccination [18].

The most common place for having the vaccination was found to be pharmacies (47.7%) and the majority (87.4%) of those who had been vaccinated had paid for it themselves. All of these findings show that the public in this region do not have sufficient information about the influenza vaccine and do not take sufficient advantage of primary health care facilities, and that health care personnel have not made sufficient recommendations to the public about the influenza vaccine. In addition although the vaccine cost has been paid by health insurance since 2005, it was seen that the majority (87.4%) of those vaccinated paid it for themselves. Although the rate of vaccination in risk groups in this research was high, it is quite low with the other countries.

Our study has several limitations. We collected data in our research from patients who went to two different primary health clinics. For this reason it is not possible to generalize our research results to the whole population. In addition we only collected data during the months of March and April; the results could have been different if we had collected data the whole year.

In conclusion, no matter how inaccurately this

research group represented society we believe it is beneficial in providing general knowledge, for the planning of health services, and in being the leader in our province for the determination of needs with these types of studies with limited resources (manpower, economic) that will be conducted in the future. We recommend that all health care personnel who examine patients in primary health care clinics provide counseling to everyone who comes to the clinic about the influenza vaccine, that risk groups be given information about the coverage of vaccine expenses by health insurance, that influenza vaccination informative brochures be left and that posters be hung in places that will attract the attention of the public, that cooperation be made with the written and visual press to keep the subject in the news, and that midwives who work in primary health care clinics provide education about the influenza vaccine during their home visits.

Key words: influenza, influenza vaccine, primary health care unit.

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RIASSUNTO

Obiettivo: Scopo di questo studio è stato quello di determinare lo status vaccinale, relativamente alla vaccinazione antinfluenzale, di pazienti afferenti presso due ambulatori pubblici di quartiere in Antalya (Turchia). **Pazienti e Metodi:** Lo studio, di tipo descrittivo, è stato condotto nel periodo compreso tra il 15 marzo e il 15 aprile 2006, presso due ambulatori di Antalya, in Turchia. Un questionario realizzato ad hoc è stato proposto a 1494 pazienti mediante interviste frontali effettuate dal personale medico della Facoltà di Medicina della Akdeniz University. Le informazioni relative ai soggetti di età pediatrica (neonati e ragazzi) sono state ottenute dai loro genitori. I dati sono quindi stati valutati mediante il programma SPSS.

Risultati: Complessivamente, la vaccinazione anti-influenzale era stata effettuata dal 7,4% (n=111) dei soggetti intervistati. Dei soggetti vaccinati, nessuno apparteneva alla fascia di età 6-23 mesi, mentre ammontava al 27,9% la quota di soggetti vaccinati di età superiore ai 60 anni. Lo status vaccinale è risultato signi-

ficativamente più elevato nel gruppo di soggetti di età superiore ai 60 anni ($p<0,001$), nei soggetti con più elevato livello di istruzione (laureati) ($p<0,001$), nei funzionari statali, nei soggetti titolari di polizza assicurativa sanitaria ($p<0,025$) e in tutti coloro che presentavano un qualunque tipo di rischio ($p<0,001$). Dalle interviste effettuate è inoltre emerso che il 24,6% dei soggetti era stato affetto da influenza nel mese precedente. Nei soggetti a rischio di influenza, la percentuale di vaccinazione è risultata del 14,9%. Nell'ambito dei soggetti affetti da patologie concomitanti, il tasso di vaccinazione è stato pari al 27,3% per i soggetti affetti da broncopneumopatia cronica ostruttiva, al 21,3% per i soggetti con patologia cardiopolmonare cronica, al 18,0% per i soggetti asmatici, e al 13,4% per i soggetti diabetici.

Conclusioni: Si raccomanda che tutto il personale sanitario operante nelle strutture ambulatoriali pubbliche educi l'utenza in merito all'importanza della vaccinazione anti-influenzale.

SUMMARY

The objective of our study was to determine the status of influenza vaccination in patients presenting to two neighborhood primary health care clinics at the provincial centre of Antalya. This type of descriptive research was conducted between March 15 and April 15, 2006, at Primary Health Care Clinics Number 9 and 16 in Antalya. A prepared questionnaire was completed by Akdeniz University Medical Faculty intern physicians during face-to-face interviews with 1494 patients. Information about infants and children were obtained from their parents. Data that were obtained were evaluated using the SPSS program.

It was determined that 7.4% (111 individuals) of the research group had been vaccinated against influenza. Although there were no infants between 6 - 23 months who had been vaccinated, the percent-

age of individuals in the 60+ age group who had been vaccinated was 27.9%. The vaccination status was significantly higher in the 60+ age group ($p<0.001$), in university graduates ($p<0.001$), in civil servants, in those with health insurance ($p<0.025$) and in those who had any kind of risk ($p<0.001$). It was determined that 24.6% of the research group had had influenza in the last month. In those at risk of catching influenza the vaccination rate was 14.9%. In the research group 27.3% of the chronic obstructive pulmonary disease (COPD) patients, 21.3% of the chronic cardiopulmonary disease patients, 18.0% of those with asthma, and 13.4% of the individuals with diabetes mellitus had received the influenza vaccination. It is recommended that all health care personnel working in primary health care clinics must educate the public about this issue.

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