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ORIGINAL ARTICLE

Seasonal Influenza Vaccine Awareness and Factors Affecting Vaccination in Pakistani Society

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ABSTRACT

Introduction: Influenza, more commonly referred as "flu", is a highly contagious viral infection of the nose, throat and lungs that impacts people of all ages and occurs in late fall, winter and early spring.

Objectives: The main objective of the study is to find the seasonal influenza vaccine awareness and factors affecting vaccination in Pakistani society.

Material and methods: This cross-sectional study was conducted in DHQ hospital, Bhakkar during 2021 to January 2022. The importance and purpose of the study was explained to the participants. After verbal consent, the patients was asked to answer simple questions which was read out from the performa prepared.

Results: The data was collected from 100 patients. Mean age of the participants was 39.69± 15.86 years. Seven patients had herpes zoster infection. Four patients had influenza. Five patients had pneumonia. One had dengue fever. And one had herpes genitalis infection in recent five years. 59 (59.7%) of the patients were taking conventional disease-modifying antirheumatic drugs (DMARDs), and nine (9.8%) of the patients were using biological agents.

Conclusion: It is concluded that knowledge, attitude and practice of participants showed satisfactory outcomes. Autoimmune diseases have a complex multifactorial etiology and many factors can contribute to their onset.

Keywords: Patients, Vaccine, Factors, Influenza

INTRODUCTION

Influenza, more commonly referred as "flu", is a highly contagious viral infection of the nose, throat and lungs that impacts people of all ages and occurs in late fall, winter and early spring. The spectrum of illness ranges from mild self-limiting disease to serious infection, and at times can lead to death, particularly in high-risk individuals. The global annual prevalence of influenza is 5–10% in adults and 20–30% in children. Annual epidemics of this disease result in about 3–5 million cases of serious illness and approximately 500,000 cases of death. Pakistan is the 6th most populous country of the world with almost 40% of urban population where influenza virus spreads in early October and its prevalent activity raised to maximum by the end of the year.

The influenza viruses are prevalent across Pakistan and affect all age groups. The menace of influenza is not much differing in Pakistan where acute respiratory tract infections are one of the leading causes of death in children aged less than five years (20 – 30% child deaths). Since November 2015, 28 deaths have been reported in Pakistan secondary to infection by influenza A (H1N1)pdm09 virus. It must be noted that this figure only represents laboratory-confirmed decedents rather than the actual influenza-associated mortality. In 2016, the National Institute of Health (NIH) Pakistan tested 300 samples across the country and found 110 positive samples.

To date, there is no official influenza vaccine policy in Pakistan. The expanded programme on immunization (EPI), established in 1976, included vaccination for six health threats to the Pakistani population: tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis and measles. It is estimated that 1000 deaths in less than 5 year children will occur daily in Pakistan if EPI is discontinued. The effectiveness of EPI lies in the extended targeted groups, including older children, adolescents and adults that would be treated thus eliminating the chance for cross infection.

Influenza vaccination is strongly recommended on a yearly basis and symptoms can be made milder by using antiviral agents. Influenza is more dangerous to children as their immune systems are not yet fully developed so they are at risk of developing flu-related complications. Each year, in Pakistan, about 20,000 children are hospitalized for flu-related complications and during the 2009 influenza epidemic, children aged between 5–14 years were found more likely to be infected compared to adults [7].

Objectives: The main objective of this study is to find the seasonal influenza vaccine awareness and factors affecting vaccination in Pakistani society.

MATERIAL AND METHODS

This cross-sectional study was conducted in DHQ hospital, Bhakkar during 2021 to January 2022. The importance and purpose of the study was explained to the participants. After verbal consent, the patients was asked to answer simple questions which was read out from the performa prepared. The Performa is attached and is self-explanatory. It contains basic patient information including the disease entity, duration and the medications used in the past and the ones currently being used. They asked about whether they have been vaccinated against the basic four diseases which are seasonal flu, hepatitis b, pneumococcal pneumonia and herpes zoster. They asked if they have suffered from these illnesses. The response was recorded on the individual performa.

Data was collected and analyzed using SPSS version 24. Groups are compared using independent sample t-test. P -value of ≤0.05 is considered significant.

RESULTS

The data was collected from 100 patients. Mean age of the participants was 39.69± 15.86 years. Seven patients had herpes zoster infection. Four patients had influenza. Five patients had pneumonia. One had dengue fever. And one had herpes genitalis infection in recent five years. 59 (59.7%) of the patients were taking conventional disease-modifying antirheumatic drugs (DMARDs), and nine (9.8%) of the patients were using biological agents. and 33 (32.9%) of patients were taking glucocorticoids.

Table 1: Demographic and disease characteristics of the participants.

Demographic data	Number (%)
Age (years)	39.69 ± 15.86
Gender (males)	79 (33.6)
Disease course (years)	4.48 ± 5.96
Education level (primary school)	22
Education level (university)	78
Diagnosis	
Rheumatoid Arthritis	23 (9.8)
Systemic sclerosis	15 (6.4)
Other CTDs	13 (5.5)
Vasculitis	10 (4.3)

Spondyloarthritis	19 (8.1)
Gout	40 (17)
Glucocorticoids	14 (60.9%)
cDMARDs	15 (67.7%)
Biological agents	9 (3.8%)

We found that only fifteen (6.4%) of the participants once had taken vaccine in recent five years. One (0.4%) patient had the influenza vaccination, and none ever took pneumococcal vaccine in recent five years. 53 (53.6%) of the patients had not received any of these vaccines. Rabie vaccine was taken most in this study, followed by HBV, tetanus and HPV vaccine. To be mentioned, none of the nine patients receiving biological agents had taken vaccines in the recent five years.

Table 2: Questions and answers about disease perception and vaccination.

Disease	YES	NO	Pre-treatment	Post-treatment
Hepatitis B	59 (67.7)	76 (32.3)	No	Yes
Herpes Zoster	22 (9.4)	16 (49.4)	No	No
Pneumococcus	36 (15.3)	139 (59.1)	Yes	No
Influenza	34 (14.5)	154 (65.5)	Yes	Yes
COVID-19	91 (38.7)	44 (18.7)	Yes	Yes

Table 03 shows the data regarding vaccine awareness in control group. All the questions were answered in yes and no statement.

Table 3: Awareness about disease perception and vaccination in control group

Statement	YES	NO
According to your opinion should government provide free vaccine against high-risk diseases?	51 (67.7)	76 (32.3)
Is vaccine protecting the receiver from infection?	21 (9.4)	16 (49.4)
Vaccines have no side effects	15 (15.3)	139 (59.1)
COVID vaccine also protect from influenza?	24 (14.5)	154 (65.5)
COVID-19 vaccine do not have side effects?	67 (38.7)	44 (18.7)

DISCUSSION

Most of the patients knew that influenza vaccine is freely provided, but among those who had never been vaccinated the proportion of patients who did not know it was higher, to our knowledge only the study by Jiang et al. explore the cost as a factor in RD patients, they report 3% of patients who had never been vaccinated because the vaccine was too expensive [9].

Patients with autoimmune inflammatory rheumatic diseases are at increased risk of vaccine-preventable infections, such as influenza, pneumococcal, herpes zoster and HPV infections. For this reason the prevention of these infections is essential in these type of patients [10]. A major concern is that vaccinations may cause an exacerbation or progression of pre-existing autoimmune diseases. The risk/benefit evaluation of recommended vaccines in patients with autoimmune diseases is in favor of vaccination in most cases. Limited data have been published regarding the possibility of vaccine-associated disease exacerbations [11]. For example, several case reports and series have been published on the onset and exacerbation of SLE after HPV vaccination, but larger studies have shown neither increased incidence nor exacerbation rate of SLE among vaccinated and unvaccinated patients. The possibility that vaccines could cause or exacerbate multiple sclerosis has been evaluated, but no association was found. In particular, hepatitis B, tetanus, or influenza vaccines did not exacerbate multiple sclerosis [12].

One of the major achievements in medicine is the development of vaccines, which allow protection against many potentially fatal infectious diseases, thus decreasing mortality worldwide. However, recent outbreaks of vaccine-preventable diseases, such as measles, show that reaching a sufficient vaccine coverage of the international population remains a challenge [13].

The patients indicated their immunization knowledge came mainly from gastroenterologists and family physicians. Very often family physicians are the main source of information for people with a long-term health condition. Moreover, vaccinations in Poland are given in a general practitioners office. The importance of a physician's recommendation for uptake of influenza vaccine, has been highlighted in a parental survey of children with a chronic illness [14].

CONCLUSION

It is concluded that knowledge, attitude and practice of participants showed satisfactory outcomes. Autoimmune diseases have a complex multifactorial etiology and many factors can contribute to their onset. For this reason, vaccines have also been studied and monitored over time in order to evaluate a possible link between vaccination and the onset of autoimmune diseases or immune-mediated phenomena. However, some areas of knowledge, such as transmission of hepatitis B and C, and attitude, such as consultation with the specialist for post-exposure, need to be corrected or changed.

REFERENCES

1. Weaver A , Troum O , Hooper M , et al. Rheumatoid arthritis disease activity and disability affect the risk of serious infection events in radius 1. J Rheumatol 2013;40:1275–81.doi:10.3899/jrheum.121288
2. Danza A , Ruiz-Irastorza G. Infection risk in systemic lupus erythematosus patients: susceptibility factors and preventive strategies. Lupus 2013;22:1286–94.doi:10.1177/0961203313493032
3. Listing J, Gerhold K, Zink A. The risk of infections associated with rheumatoid arthritis, with its comorbidity and treatment. Rheumatology 2013;52:53–61.doi:10.1093/rheumatology/kes305
4. Au K,Reed G, Curtis JR , et al. High disease activity is associated with an increased risk of infection in patients with rheumatoid arthritis. Ann Rheum Dis 2011;70:785–91.doi:10.1136/ard.2010.128637
5. Fernandez-Martinez S, Cortes X, Borrás-Blasco J , et al. Effectiveness of a systematic vaccination program in patients with autoimmune inflammatory disease treated with anti-TNF alpha drugs. Expert Opin Biol Ther 2016;16:1317–22.doi:10.1080/14712598.2016.1218844
6. Furer V, Rondaan C, Heijstek MW, et al. Ann Rheum Dis 2020;79:39–52.
7. Costello R, Winthrop KL, Pye SR , et al. Influenza and pneumococcal vaccination uptake in patients with rheumatoid arthritis treated with immunosuppressive therapy in the UK: a retrospective cohort study using data from the clinical practice research Datalink. PLoSOne 2016;11:e0153848.doi:10.1371/journal.pone.0153848
8. Sandler DS, Ruderman EM, Brown T , et al. Understanding vaccination rates and attitudes among patients with rheumatoid arthritis. Am J Manag Care 2016;22:161–7.
9. McCarthy EM, de Barra E, Bergin C , et al. Influenza and pneumococcal vaccination and varicella status in inflammatory arthritis patients. Ir Med J 2011;104:208–11.
10. Nguyen M, Lindegaard H, Hendricks O, et al. Factors associated with influenza and pneumococcal vaccine uptake among rheumatoid arthritis patients in Denmark invited to participate in a pneumococcal vaccine trial (Immunovax_RA). Scand J Rheumatol 2017;46:446–53.doi:10.1080/03009742.2016.1242774
11. Brocq O, Acquacalda E, Berthier F , et al. Influenza and pneumococcal vaccine coverage in 584 patients taking biological therapy for chronic inflammatory joint: a retrospective study. Joint Bone Spine 2016;83:155–9.doi:10.1016/j.jbspin.2015.11.005
12. Hmamouchi I, Winthrop K, Launay O , et al. Low rate of influenza and pneumococcal vaccine coverage in rheumatoid arthritis: data from the International COMORA cohort. Vaccine 2015;33:1446–52.doi:10.1016/j.vaccine.2015.01.065
13. Morin M-P, Quach C, Fortin E , et al. Vaccination coverage in children with juvenile idiopathic arthritis followed at a paediatric tertiary care centre. Rheumatology 2012;51:2046–50.doi:10.1093/rheumatology/kes175
14. Curtis JR, Xie F, Chen L , et al. Use of a disease risk score to compare serious infections associated with anti-tumor necrosis factor therapy among high- versus lower-risk rheumatoid arthritis patients. Arthritis Care Res 2012;64:1480–9.doi:10.1002/acr.21805 doi:10.1002/acr.21805