

Vaccination Status, Knowledge, and Acceptance of Adult Vaccinations against Respiratory Illness among Patients with Type 2 Diabetes Mellitus

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Abstract

Patients with diabetes mellitus are more prone to develop infections with influenza virus and pneumococcus. Once they develop respiratory infections, they are twice more likely to die of complication related to the infection. Although there are no Indian guidelines, recent publications have recommended vaccination in patients with diabetes of all ages. Our study was undertaken to find the barriers to the uptake of adult vaccination against respiratory illness among patients with diabetes attending a diabetic clinic in a tertiary care institution. Of the 149 patients interviewed, only 2% and 0.7% had been previously vaccinated against influenza and pneumococcus, respectively. Although 52% of patients agreed that vaccination was safe and effective, only 17.4% got vaccinated during the period of observation after counseling. The primary reasons for refusal were financial (51.7%), while some were not completely convinced of its benefits (9.4%); the other reasons included fear of complications (7.4%) and needles (0.7%).

Keywords: Adult vaccination, adult vaccination against respiratory illness, diabetes mellitus, influenza vaccine, pneumococcal vaccine

INTRODUCTION

Patients with diabetes have been found to be two to four times (age groups: >64 years and <64 years, respectively) more likely to die from influenza-related pneumonia when compared to individuals without diabetes. In addition, patients with diabetes are more prone to influenza infections during seasonal influenza epidemics when compared with healthy controls.^[1] One of the mainstays for protecting the general population from respiratory illnesses is vaccination,^[2,3] which has helped reduce disease-related hospitalizations, associated complications, and the mortality. Adult vaccination against respiratory illnesses such as influenza and pneumococcus is recommended for patients with type 2 diabetes mellitus; however, the vaccination uptake rate among them remains low.^[4,5] This is particularly true in our country where the patients have to spend out of pocket for vaccination.

This study explores the vaccination status, knowledge, and acceptance of vaccination among patients with type 2 diabetes attending a diabetic clinic in a university-affiliated teaching hospital in North India with regard to influenza and

pneumococcal vaccination. The primary aim of the study was to identify the possible hindrances against acceptance of adult vaccination against respiratory illness (AVARI).

MATERIALS AND METHODS

Study setting and study population

This cross-sectional observational study was conducted in diabetes and endocrine clinic at a university-affiliated tertiary referral hospital for 12 months after approval from the institutional research and ethics committee. All adult patients (age >18 years) with type 2 diabetes for at least 6 months were consented if they were willing to participate in this study. Cognitively impaired patients who did not have the capacity to consent, patients with psychiatric and major

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neurological illness, pregnant women, patients with a limited life expectancy and patients with immunodeficiency and HIV infection were excluded from the study.

Questionnaire and methods

A structured questionnaire was designed by the investigators (CG and JJJ) for data collection. The first section consisted of questions on the demographic and medical history of the patient including details about current diabetes treatment and complications. The second section consisted of questions on awareness and knowledge of benefits regarding influenza and pneumococcus vaccination, including the participant's individual perception of AVARI. The third section documented the vaccination status of the patient against pneumococcus and influenza. At this point, patients who had not been vaccinated were counseled by the investigator and information pamphlets regarding influenza and pneumococcus vaccinations were provided to the patients. This consisted of all the information about the vaccines including their route of administration, cost, side effects and complications.

Unvaccinated patients were offered a prescription of pneumococcal and influenza vaccination. The fourth section of the questionnaire documented the uptake of vaccination by patients on the first and one subsequent visit and also the reasons for refusal among those who remained unvaccinated after two visits.

RESULTS

A total of 149 patients (80 men and 69 females) with a mean age of 65 years participated in the study. Regarding knowledge, 85% and 79% of patients were unaware about the symptoms of influenza and pneumococcus, respectively. A small majority of the patients ($n = 78$, 52%) thought adult vaccinations were effective; however ($n = 69$, 46%), they did not know about their effectiveness. While almost everyone ($n = 143$, 96%) felt they were safe, only 79 patients (53%) were aware of the need for AVARI. The primary source of this information was the physician (91.9%), media (6.4%), pharmacist (2.7%), and other family members (1.3%).

With regard to the current vaccination status, only 3 (2%) and 1 (0.7%) had been previously vaccinated against influenza and pneumococcus, respectively. After counseling by the investigator, 26 patients (17.4%) agreed to get vaccinated during the study visit or got vaccinated on the next visit; of the remaining, 40 (26.8%) refused and 82 (55%) promised to get vaccinated at a later visit.

Among the unvaccinated patients, financial reasons accounted for 77 (51.7%) refusals while 14 (9.4%) patients were not convinced of the benefits; other reasons for refusal included fear of complications (7.4%) and fear of needles (0.7%) [Figure 1].

DISCUSSION

From our study, it is clear that knowledge and awareness about preventable respiratory illness among patients with

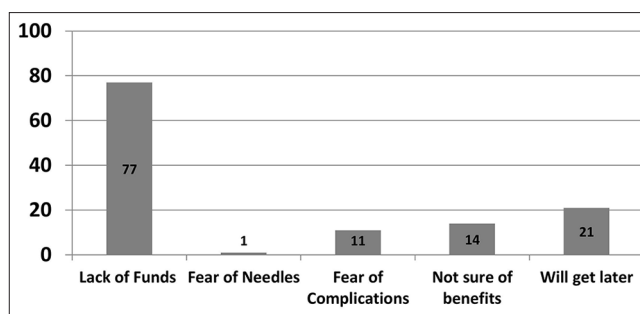


Figure 1: Reasons for refusal of vaccination among patients who were not previously vaccinated and who did not get vaccinated during the study period after one to one counseling ($n = 122$)

diabetes is poor. Patients had minimal knowledge about the adult vaccination protocols in patients with diabetes. The number of patients who were vaccinated against these vaccine-preventable respiratory diseases was negligible.

The Centers for Disease Control's Advisory Committee on adult immunization recommends vaccination against pneumococcus and influenza in patients with diabetes of all ages.^[6] There are no current Indian guidelines but two publications over the last few years have addressed this issue.^[7,8]

Patients with diabetes are at a higher risk of being affected by influenza and pneumococcus; hence, this study once again confirms the need of increasing awareness of adult vaccinations, among patients with diabetes. Of the patients who were aware of the need to vaccinate, the majority came to know about this through their physicians, proving that physicians play a very important role in the propagation of adult vaccinations.

Among all the individuals who received counseling and were subsequently convinced about the benefits of adult vaccination, only about one-sixth of the patients attending the clinic agreed to get vaccinated, while majority of them refused vaccinations as they had insufficient funds to bear the expenses of vaccination. This shows that cost is an important factor influencing the uptake of adult vaccination.

Addressing the costs of vaccinations for pneumococcus and influenza vaccine and increasing physician awareness are likely to be the two most effective ways to increase the uptake of adult vaccination against respiratory infections in patients with diabetes.

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Conflicts of interest

There are no conflicts of interest.

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