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Amy Branham

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Improving Allergy Immunotherapy Adherence

Amy Branham, MSN, FNP-BC

Introduction of the Problem

Allergic rhinoconjunctivitis is a chronic health issue that affects many people. Its prevalence is increasing worldwide. Consistent with national data regarding allergy immunotherapy adherence rates, patients at a suburban Midwest teaching clinic often do not complete their full prescribed course of allergy immunotherapy. This can lead to negative effects on personal health and overall health system costs. However, there were no plans to improve adherence to allergy immunotherapy.

Literature Review

Allergic rhinoconjunctivitis (allergic rhinitis) prevalence is increasing worldwide (Larsen, Broge, & Jacobi, 2016). This has a direct impact on increasing healthcare costs. The costs related to treating allergic rhinitis increased \$5.1 billion from 2000-2005 (Koberlein, Kothe, Sieber, & Mosges, 2013). Adherence to allergy immunotherapy (AIT) can reduce healthcare costs (Larsen et al., 2016). AIT is one of the many treatments available for allergic rhinitis. First line treatment for allergic rhinitis is typically over the counter medications (OTC), including antihistamines and nasal steroid sprays. AIT is recommended once patients have failed treatment with OTC medications. AIT is an effective treatment for allergic rhinitis (Demoly, Passalacqua, Pfaar, Sastre, & Wahn, 2016). AIT is cost effective as it reduces over-the-counter medication consumption, decreased provider visits, and increased productivity at work and school (Larsen et al., 2016). AIT has a disease modifying effect which lasts for several years so this further proves it is cost effective.

There are two methods of AIT, these include subcutaneous immunotherapy (SCIT) or sublingual immunotherapy (SLIT). SCIT is a subcutaneous injection that is generally given in a medical office, and it is the predominant method of AIT. SLIT is available in aqueous drops or tablets and is administered at home. Many clinics offer SCIT. SCIT was found to have a higher adherence rate (Kiel et al., 2013). However, the adherence rate to the completion of the treatment course of AIT is suboptimal at 18% (Kiel et al., 2013). Adherence and completion of the AIT course is key to controlling allergic rhinitis symptoms (Senna, Caminati, & Lockey, 2015).

Adherence to AIT is poor due to the long-term commitment, inconvenient clinic hours, lack of transportation, costs, adverse reactions, and several other factors (Senna et al., 2015). The most common reason for non-adherence to AIT was inconvenience, regardless of the type of AIT (Incorvaia et al., 2008). Four out of ten people were not aware of the long-term commitment (Senna et al., 2015). Most patients stop treatment in the first month of AIT (Senna et al., 2015). Forty percent of patients expected an absence of allergies and 20% expected reduced symptoms days or weeks after starting AIT (Incorvaia et al., 2008).

A patient's knowledge of AIT and what to expect is the core of increased adherence to treatment (Incorvaia et al., 2008). The more a patient knows about the treatment and what to realistically expect can only enhance their adherence to treatment (Demoly et al., 2016). Education regarding what allergic rhinitis is, definition of respiratory allergy, what allergen immunotherapy is, and how it works has been found to increase adherence to treatment (Calderon et al., 2015). A communication template discussing the aforementioned details for non-adherent patients found 67% would have resumed AIT after viewing the template (Calderon et al., 2015). Effective communication is the key to successful treatment (Senna et al., 2015).

Patients remember about 60% of what is said to them during their initial visit (Senna et al., 2015). Redundant education promotes better retention of information and this can increase adherence (Senna et al., 2015). Calderon et al's, (2015) template offers key components of AIT and education that can increase adherence to treatment. The template is conducive to printing in handouts and other documents that can be revisited by patients. A multi-faceted strategy including repeated education, regular follow-up visits, and the use of new technology can be successful to increase adherence to AIT (Senna et al., 2015).

The use of social media and modern technology has the potential to increase adherence to AIT (Joshi & Dimov, 2014). A 2012 survey of 3,014 of adults living in the United States found 85% own a cell phone (Pew Research Center). Of these cell phone owners, 80% use text messaging services, and 9% use text messaging regarding health/medical concerns/appointments (Joshi & Dimov, 2014). Text messaging as a daily/weekly reminder for a patient regarding AIT can have a positive effect on patient adherence (Joshi & Dimov, 2014). The visual cue acts a reminder to the patient. Therefore, it is feasible to implement a text message as a reminder to enhance adherence to AIT.

Project Methods

The goal of this project was to increase subcutaneous immunotherapy adherence rates by focusing on patient education, text message reminders, and clinic accessibility. Initial implementation involved working with clinic personnel to develop the content of the reminder texts and of additional educational materials. The initial project phase began in May 2018 with a meeting with the allergy program director to develop wording/statement for the text message reminder and communication/education template, and to discuss the options for increasing the hours of allergy clinic. A meeting with information technology (IT) in June 2018 was conducted

to discuss ways to have the text message implemented. The text message included the day of the week and time they are scheduled to come in for their allergy injection. Initially, the text message was to include the allergy clinic hours, but IT was unable to make this happen due to software issues not allowing it. The communication/education template included the definition of respiratory allergy, the symptoms and impact of allergic rhinitis, allergy immunotherapy benefits, mechanism of action, and anticipated length of treatment. The communication/education template was printed with the goal of providing it to patients when they came in for their allergy injections, specifically ones who were non-adherent. At this point in time, staffing shortages did not allow for increasing the hours of the allergy clinic. However, clinic accessibility improved when the clinic moved to a free-standing building that housed only our otolaryngology and allergy clinics. The parking lot is right in front of the building and allows patients much easier access to the clinic. The planned implementation date for the text message reminder and teaching materials was June 2018, but this did not occur at that time due to administrative issues. However, the changes were executed at the beginning of fall. The text message reminders, which included appointment day and time, were sent to patients who receive subcutaneous immunotherapy and who had agreed to receive the text. The communication/education template was given to patients each time they came in for their injection beginning in September 2018.

To evaluate effectiveness, a convenience sample of individuals receiving subcutaneous immunotherapy was collected over a 3-month period during the months of September through December 2018. The adherence rate was measured prior to implementation of the text message reminder and communication/education template. It was then measured again once the project was completed. Prior to implementation and collection, an IRB was submitted. The Southern

Illinois University Edwardsville IRB determined that this effort was considered a Quality Improvement Project (QIP) and did not constitute human subjects research as defined under 45CFR 46.102(l). Therefore, no further action was required prior to starting the implementation.

Evaluation

There were 172 SCIT patients at the clinic. Thirty-nine percent of SCIT patients were non-adherent to AIT prior to the implementation of this project. Adherence was defined as patients who routinely come to receive their scheduled injections. Non-adherence was defined as patients who regularly skip/miss their scheduled injections. During the project, 2 patients moved out of state, 2 patients had their insurance change and could no longer come to the clinic, and 12 patients dropped out completely. Fourteen of the remaining 51 non-adherent patients became adherent to AIT as a result of this project. The non-adherence rate went from 39% to 27%.

One week after the project completed a 4-point Likert scale survey was given to patients to gauge their satisfaction with the text message reminders. Twenty-four surveys were completed of which 19 indicated they would like the text message reminder to continue. Comments on the surveys seemed to indicate the texts were helpful in reminding patients to come for their injections. The text message reminders were being sent 6 days prior to the patient's scheduled injection appointment. Of the 19 who wished to continue the text message reminders, they indicated they would prefer receiving the texts 1-2 days prior to their scheduled injection appointment. Clinic accessibility was enhanced when the clinic moved locations. However, the allergy clinic hours remain unchanged due to staffing shortages.

Impact on Practice

Multiple practice improvements were achieved with implementation of this DNP project. Adherence to AIT improved as a result of the text message reminders and communication/education template. Patients seemed satisfied with receiving reminders to help them adhere to their allergy injection regimen. Patients voiced the communication/education template was helpful and informative.

Future plans include meeting with IT to evaluate the possibility of sending the text message reminders 1-2 days prior to the scheduled injection appointment. This would be more helpful and a better reminder for the patients. We anticipate that the long-term impact will include healthier patients and reduced health care costs. This project can be replicated if the clinic's EHR/business software has the capability to send appointment reminders. The communication/education template can be replicated/reproduced.

Conclusion

Allergic rhinitis is a chronic but treatable health issue. Allergic rhinitis contributes to increased health care costs and decreased productivity at work and school. AIT is an effective disease modifying treatment for allergic rhinitis with long-term results. AIT adherence is key in order to achieve the lasting effects. AIT adherence can be improved with text message reminders and communication/education templates. Engaging patients with multiple cues can successfully increase adherence to treatment. Increasing adherence to AIT is worth a shot and will decrease the ever-growing health care costs.

Author Contact Information

Amy Branham branham-2@comcast.net