Allergol Immunopathol (Madr). 2014;42(6):518–526

Allergologia et immunopathologia

Sociedad Española de Inmunología Clínica, Alergología y Asma Pediátrica

www.elsevier.es/ai

ORIGINAL ARTICLE

The correlation between parental education and their knowledge of asthma

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Received 29 May 2013; accepted 23 December 2013
Available online 17 June 2014

KEYWORDS
Asthma knowledge;
Parents;
Education

Abstract
Objective: To evaluate the impact of parental education on the success of Asthma Educational Intervention (AEI).
Methods: AEI took place after the children's hospitalisation. Parental asthma knowledge was assessed at three time points: before AEI, immediately after, and 12 months later. The Intervention (I) group of parents ($N = 231$) received complete AEI. The Control (C) group of parents ($N = 71$) received instructions for proper use of asthma medications and the handbook.
Results: Asthma knowledge in I group increased immediately after the AEI ($p < 0.01$), and had not changed ($p > 0.05$) 12 months later. There were four subgroups in group I divided based on education level: elementary school, high school, college, and university degrees. Taking into account the parental education level, there were no differences in the baseline and final knowledge of asthma between subgroups ($p > 0.05$). The number of asthma exacerbations decreased after AEI (5.96:2.50, $p < 0.01$), regardless of the parental degree. Knowledge of asthma in group C did not improve during the study ($p = 0.17$). Final asthma knowledge was higher in group I compared to group C ($p < 0.01$).
Conclusion: The parental education level did not influence the level of asthma knowledge after the AEI. The motivation and the type of asthma education had the greatest input on the final results.

Abbreviations: AEI, asthma educational intervention; AAP, asthma action plan; AK, asthma knowledge.

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http://dx.doi.org/10.1016/j.aller.2013.12.007

Practice implications: All parents should be educated about asthma regardless of their general education.

Introduction

As in every chronic disease, the education of parents and patients about all aspects of childhood asthma is very important. The education of patients is recognised as the fundamental basis for childhood asthma monitoring, symptom control, and treatment.[1] The education of parents improves morbidity,[2,3] knowledge, compliance, self-management efficiency,[4,5] the control of asthma, and quality of life.[6–8] There are many factors related to the characteristics of the disease in children such as society, parents, family and a method of asthma education. All can have an impact on the patient and parental asthma knowledge.

Guidelines on the management of asthma promote asthma education as one of the strongest keys to improving asthma exacerbations.[9–12] Regardless of high public awareness of asthma and allergies during the past years, the evidence suggests that the knowledge of asthma is still low.[13,14] On a daily basis, we face the denying of the disease, unsatisfactory asthma prevention and control and behavioural problems in children and parents.[15,16] The majority of developed countries have widely introduced asthma self-management through their national health programmes. Updated guidelines issued by the National Asthma Education and Prevention Programme (NAEPP) outlined essential components of asthma therapy, symptom monitoring, patient education and trigger avoidance in asthma.[11] However, in undeveloped countries as well as in transitional countries, there is the medical and economic burden of uncontrolled asthma.[17,18] In Serbia, we introduced Asthma Educational Intervention (AEI) in our hospitals, endorsed by the ERS Educational Grant, as a part of the Asthma action plan in 2004. This was the first structured one-year follow-up survey of research in asthma education and its impact on children's asthma outcomes in Serbia. The main goal of AEI was to educate parents to have a better understanding of numerous aspects of childhood asthma including diagnosis, prognosis, management, and treatment perceptions among the patients with asthma. The impact of parental education on improvement of children's asthma outcomes, symptom perception, usage of medications and self-management evaluation, and the impact of environmental tobacco exposure to children with asthma were reported elsewhere.[19,20]

The aim of our study was to analyse parents' knowledge of asthma before and after the AEI, and its influence to baseline and final, acquired knowledge of asthma as well as the success of AEI. Our hypothesis was that the higher the level of parental education, the higher their baseline and final acquired asthma knowledge.

Methods

Participants

The study included parents of 420 children (aged 7–16 years) hospitalised for acute asthma exacerbation that required IV/IM corticosteroid therapy at least three days in the Children's Hospital for Respiratory Diseases and Tuberculosis. Study data were collected from June 2005 till June 2006 and analysed in 2007. Only children living with both parents participated in the study. Neither the actual child preventive medication nor Global Initiative for Asthma (GINA)[9] categorisation into moderate/severe persistent asthma groups was not considered within the inclusion criteria. We excluded 31 parents whose children did not meet the inclusion criteria: 21 children had an additional chronic illness and 10 parents changed their mind and refused to take part in the study.

Intervention

Unequal randomisation with a ratio 2:1 was used as ethically feasible. We considered the usefulness of complete AEI in real life situations, and the number of parents with complete AEI was intentionally doubled. The randomisation procedure did not depend on sex and age of children, or on age of parents.

Both parents of 259 children were randomly assigned to the Interventional (I) group, while both parents of 130 children were randomly assigned to the Control (C) group. Group I received the complete AEI. The complete AEI consisted of five movies and audio-visual Power Point presentations related to all aspects of asthma and the proper use of asthma medications, the handbook entitled ''Meet your asthma'' and workshop/panel discussions which followed afterwards. Group C received only the instructions for the proper use of asthma medications and the handbook.

The parents of eight children were excluded from group I because their children were briefly hospitalised and they had no time to complete the education, or they were not able to attend the lectures on the appointed days because of living too far away. Both parents of 251 children received the complete AEI. Immediately after the education, the handbook titled ''*Meet your asthma*'',[21] with a written Asthma Action Plan (AAP) was provided to them. Due to relocation to another city or lost telephone contact, the parents of nine children were lost to follow-up. Interrupted interventions occurred in five cases and because of this they missed their regular appointments. Additionally, the parents of six children were excluded because they provided inadequate