

Support For Children With Asthma In Primary Health Care In The Tuzla Canton Area

Amela Pašić¹, Renata Hodžić², Fuad Pašić³, Harun Brkić⁴

¹Clinic for pediatric disease, University Clinical Center Tuzla, Bosnia and Herzegovina, ²Department of Neurology, University Clinical Center Tuzla, Bosnia and Herzegovina, ³Surgical Clinic, University Clinical Center, Tuzla, Bosnia and Herzegovina, ⁴University Clinical Center Tuzla Department of Neurosurgery Tuzla, Bosnia and Herzegovina

ABSTRACT

Introduction Asthma is a chronic inflammatory disease of the respiratory tract whose prevalence in children's age and adults shows a constant increase in almost all countries. In the same time, asthma is a major socio-economic problem because the funding for its treatment is enormous and took the 5th place for funding in the world to treat patients. **Subjects** Asthma School organized by University Clinical Centre Tuzla takes place within local health institutions. Active attendance is recommended for at least one programme in order to acquire basic knowledge and it is advisable to repeat it. The education is conducted by a team consisting of: a pediatrician pulmonologist and a nurse. The pulmonologist discusses asthma as a disease, diagnosis, its causes and the latest guidelines in the treatment and control of symptoms. **Results** Over a period of 3 months, 3 asthma schools were organized in 2 local communities attended by 53 children with parents. Of these, 60.3% were male and 39.7% were female children. The highest number was at the age of six (50.9%) and the lowest was 10-15 years of age (13.2%). Out of the total number, 9 patients (16.9%) had periodical asthma, 16 (30.1%) had mild permanent asthma, 18 (33.9%) medium severe asthma, and 10 (18.8%) permanent severe asthma. Well-controlled asthma had 16 (30.1%), partially controlled 24 (45.2%) and uncontrolled 13 (24.5%) children. **Conclusion** Asthma school are organizing for educating children and their families, but also educating doctors (pediatricians, family doctors) as well as middle medical staff at the level of primary health care. Integrative medicine implemented on several levels of health care with the correct incorporation of families and patients can ultimately improve results for threatening this disease and make some progress in reducing costs as well.

INTRODUCTION

Asthma is a chronic inflammatory disease of the respiratory tract whose prevalence in children's age and adults shows a constant increase in almost all countries. About 30-40% of the world's population suffer from allergic diseases (1). The leading chronic disease of children in most developed countries is the cause of the highest number of school absences, and one of the most common causes of hospitalization of school children (2). Asthma is also a major socio-economic problem because the funding for its

treatment is enormous. Asthma is considered to be in the 5th place for funding in the world to treat patients. The occurrence of asthma in children's age is a special medical entity and requires adequate diagnosis, objectively established diagnosis, properly optimised therapy and proper monitoring of the effects of medical treatment. A well-informed parent with a well-informed child and a properly placed family environment can help achieve better outcomes in the treatment of this disease. Knowledge transfers in clinical facilities through developed counselling centres designed as "Asthma School" can also greatly help with more favourable treatment outcomes. Working in smaller groups with medical professionals (doctors and nurses) can bring this disease even closer to the family and the sick child. Education should be adapted to the age of the patient, the level of education of the child and parents, socio-economic conditions, customs.

Children and their parents should be educated about asthma as a disease, how it is treated and monitored, in order to achieve optimal control of the disease. Education is actually the attainment of a partnership between a doctor or a medical worker and a patient with a family. The patient should acquire the necessary knowledge of asthma as a chronic disease characterised by worsening, recognising triggers and controlling them. It is also important to recognize exacerbations and master the methodology of self-help, clarify the need to take long-term disease-controlled therapy as well as the types of medicines and their mechanism of action. Certain skills should also be acquired, e.g. measuring peak airflow in assessing lung function and severity of exacerbation and using aids (airlock, sprayers) to administer certain medicines. Any patient with uncontrolled or poorly controlled asthma should be further educated,

These programmes are organized periodically and are designed as an interactive type of education involving pediatrician pulmonologists, nurses, parents of sick children. In this way, the family and the patient resolve concerns about the treatment and possible outcomes of the disease. The patient becomes an active participant in the long-term procedure of adequate treatment and management of asthma. Successful treatment of childhood asthma requires good cooperation with the child and his parents and with primary health care doctors. It is extremely important to educate parents and children about asthma triggers and ways of self-help in asthma

attacks, which contributes to the quality of daily life of patients.

Asthma control objectives are: minimal chronic symptoms, including nocturnal symptoms; the minimum number of deterioration; the minimum number of urgent visits to the doctor; minimal need for symptomatic medicinal products; normal physical activity; minimum variability in lung function (< 20%); near normal PEF values; use of medicinal products without side effects (5)

Table III. Global Initiative for Asthma (GINA 2020) assessment of ast

In the past 4 weeks, has the patient had:

Daytime symptoms > 2 times a week?	Yes
Any night waking up due to asthma?	Yes
Rescue medication for symptoms needed > 2 times a week?	Yes
Any activity limitation due to asthma?	Yes

GINA recommends a shorter questionnaire of only four questions for Asthma control.

Measurement of objective parameters of pulmonary function and hyperreactivity is sometimes limited due to poor child co-operation, so the introduction of adequate therapy and a good clinical response is the most reliable route to diagnosis.

SUBJECTS

The Clinic for Children's Diseases of the Tuzla University Clinical Center has a long tradition of organizing and conducting "Asthma School" for both nursing patients and their parents. It is important to say that for those patients whose disease is poorly controlled, through re-education and re-evaluation of acquired knowledge in "Asthma School", it can positively influence treatment outcomes. Asthma School takes place within local health institutions. Active attendance is recommended for at least one programme in order to acquire basic knowledge and it is advisable to repeat it. The education is conducted by a team consisting of: a pediatrician pulmonologist and a nurse. The pulmonologist discusses asthma as a disease, diagnosis, its causes and the latest

guidelines in the treatment and control of symptoms. The nurse discusses how to administer the medicines, shows proper inhalation technique with or without inhalation aids, which is one of the most important tasks of the nurse in the pulmonary clinic.

The global COVID-19 pandemic has halted this and many other standardized projects around the world. It made innovative and educated doctors think more meaningfully about other approaches in the design of "Asthma School". In cooperation with fellow pediatricians working in health care homes at the Tuzla Canton level, we reduced clinical knowledge, skills to primary health care through organizing these "Asthma School".

RESULTS

Over a period of 3 months, 3 asthma schools were organized in 2 local communities attended by 53 children with parents. Of these, 32 (60.3%) were male and 21 (39.7%) were female. The highest number was at the age of 6, 27 (50.9%) and the lowest was 10-15 years of age, 7 (13.2%). Out of the total number, 9 patients (16.9%) had periodical asthma, 16 (30.1%) had mild permanent asthma, 18 (33.9%) medium severe asthma, and 10 (18.8%) permanent severe asthma. Well-controlled asthma had 16 (30.1%), partially controlled 24 (45.2%) and uncontrolled 13 (24.5%) children. Of the total attendance at "Asthma School" 9 (16.9%) used only occasionally in the stages of worsening β 2 short acting agonists and anti-cholinergic agonists, 11 (20.75%) inhaled corticosteroids (ICS), leukotric receptor antagonists (LTRA) 12 (22.64%), concomitant inhaled corticosteroids leukotric receptor inhibitors (ICS + LTRA) 18 (33.96%), while 4 (7.54%) received concomitant inhaled corticosteroids, β 2 long acting agonists and leukotric receptor blockers (ICS + LABA + LTRA). The majority of children 23 (43.3%) received instructions on the use of therapy from a pediatrician or a family doctor at a Health Care Centre, 19 (35.8%) at a pulmonary counseling centre at a Children's Disease Clinic, and 11 (20.7%) during hospitalization at the Clinic.

Table 2.Characteristics of the subjects in relation to the studied groups and the degree of Asthma control

Parameters	Age groups (years)		
	Younger (0-5,9)	Middle (6-9,9)	Older (10-15)
Total	27	19	7
Female (N;%)	11 (40,7)	8 (42,1)	2 (28,5)
Small (N;%)	16 (59,3)	11 (57,9)	5 (71,5)
Middle age (years; $\bar{x} \pm SD$)	3,6 \pm 0,8	7,6 \pm 1,3	11,9 \pm 1,2
Well-controlled Asthma (N;%)	13 (48,1)	10 (52,6)	3 (42,8)
Not well. controlled Asthma (N;%)	9 (33,3)	6 (31,5)	2 (28,5)
Very poorly asthma controlled (N;%)	5 (18,5)	3 (15,7)	2 (28,5)

Table 3. Medications Taken by the subjects in relation to the study Group

Medicines	Age groups (years)		
	Younger (0-5,9)	Middle (6-9,9)	Older (10-15)
SABA, ALONE	5	4	0
ICS	8	2	1
LTRA	7	4	1
ICS + LTRA	7	8	2
ICS + LTRA + LAB	0	1	3

Working in small groups surrounded by a pediatrician pulmonologist, a nurse, a parent, and a sick child proved very effective. Through this approach, families and children were educated but also doctors in primary health care who were not fully and adequately familiar with this concept. With this concept, we received adequately optimised therapy and personalized approach to a child with asthma.

CONCLUSION

Working outside clinical and hospital facilities involves additional involvement of medical professionals in the treatment of the pediatric population. They are often already burdened enough without this. However, since asthma is a chronic disease, we believe that a better organization and treatment strategy can ultimately result in better overall results in the treatment of sick children. These knowledge transfers need to be seen in multiple dimensions. It is about educating children and their families, but also educating doctors (pediatricians, family doctors) as well as middle medical staff at the level of primary health care. Integrative medicine implemented on several levels of health care with the correct incorporation of families and patients through "ASTHMA SCHOOLS" can ultimately improve our overall results. In the future, given the development of IT technologies, certain new pandemics, it is possible to implement such programmes well designed through ZOOM ASTHMA SCHOOLS.

LITERATURE

1. Pawankar R, Walkter Canon G, Holgate ST, lockey RF. World Health
2. Organisation *White book on allergy 2011-2012 Executive summary.*
3. HSU J, Qin X, Beavers SF, Mirabelli MC. Asthma-relatified school Absenteeism, Morbidity, and Modifiable factors. *Am J Prev Med.* 2016 July; 51 (1): 23-32.
4. W.C.C.Andrade, P. Camargos, L. Lasmar, J. Bousquet A pediatric Asthma management program in a low-come setting Resulting in restricted use of Health Service for acute Asthma. *Allergy* 2010; 65:1472-7.
5. Muraro A, Clark A, Bezer K and all. The management of the allergic child at school: EAACI/GA2LEN Task force on the allergic child at school. *Allergy* 2010; 65:681-9
6. Schultz A, Martin AC. Outpatient management of Asthma in children. *Clin Med Insights Pediatr.* 2013 APR 14; 7:13-24.
7. Global Initiative for Asthma (GINA). Accessed July 30, 2020. Available at: <http://www.ginasthma.org/>.