(df = 2) = 8.856 P = 0.012; 3) Parent’s QoL is more likely to interfere with work χ² (df = 2) = 16.517 P < 0.001; recreational activities χ² (df = 2) = 17.759 P < 0.001 and family activities χ² (df = 2) = 16.517 P < 0.001; 4) Parents are more likely not to agree regarding asthma management χ² (df = 2) = 7.677 P = 0.022; not to agree with relatives/caregivers on how to manage asthma χ² (df = 2) = 9.853 P = 0.007; lack confidence in teachers/school personnel to manage asthma at school χ² (df = 2) = 20.216 P < 0.001.

Conclusions: The AsthmaPACT provides an assessment of 1) risk-factors for non-adherence and 2) patient self-report of adherence, and is readily available as a tool to individuals with asthma who have access to the Internet. Findings in this study are consistent with GINA 2008 Guidelines regarding common risk-factors for non-adherence and specifically to the child’s emotional state and QoL for both the child and parent. The AsthmaPACT might be considered for symptomatic patients to identify barriers to treatment and diagnose adherence status.

445

Inability of Medical Students to Use of Three Types of Inhaler
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Background: Several studies have demonstrated that a significant percentage of health care professionals are deficient in both knowledge and skill regarding the inhalers. But no data is available about the assessment of inhaler technique and knowledge among medical students in Korea. The aim of this study was to evaluate the proficiency and knowledge of medical students in proper use of 3 kinds of inhalers (metered dose inhaler, turbuhaler, and diskus).

Methods: We enrolled 40 third-year medical students who are on hospital training course. The participants received 25 to 35 minutes of instruction from a trained nurse educator for asthma. Three month later, we assessed their knowledge and skill regarding inhaler use. They were asked to discriminate each type of 3 devices and to demonstrate the use of each device using placebo inhalers. Also, they were asked about the prevention and management for local adverse reaction induced by inhaled corticosteroids (ICS). Participants’ inhaler skill was assessed into 3 levels as good, inadequate, and poor for each device type.

Results: Only 12.5% (5/40) of medical students could explain the merits of inhalation therapy compared to oral route. 67.5% (27/40) of participants could not discriminate all types of inhaler devices. With regards to prevention and treatment option for ICS-related local side effects, only 22.5% (9/40) answered correctly. Subjects with good performance grade were found in 12.5% for metered dose inhaler, 40.0% for turbuhaler, and 57.5% for diskus.

Conclusions: We conclude that large percent of medical students were deficient in knowledge and proficiency regarding the inhalers. A brief educational session with demonstration by trained asthma nurse was not effective in enhancing inhaler technique or increasing knowledge on inhaler treatment.

446

Impact of Providing Physical Education Teachers with Information about Asthma When Training Children and Adolescents with This Disorder
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Background: To assess the impact of providing physical education teachers with information about asthma and the progression of this disorder when training children and adolescents with this disorder.

Methods: A descriptive, applied, prospective, longitudinal and evaluation study was conducted with the participation of 160 children, with ages ranging from 9 to 12 years and 320 children aged 13 to 14 years from 4 different schools. Two subgroups for each age were established with a similar number of members. A subgroup with 80 students and another with 160 students were headed by 2 teachers instructed in handling students with asthma while the 2 remaining subgroups were headed by 2 teachers who did not have any knowledge about asthma. The following aspects were assessed: prevalence and severity of asthma, exercise-induced asthma, physical fitness and maximum expiratory flow at the beginning of the study and 6 months later.

Results: An 18.5% prevalence of asthma was observed among the 480 students; 28.1% in children from 9 to 12 years and 13.7% from 13 to 14 years. In the group of asthmatic children from 9 to 12 years, significant differences were observed in favor of asthmatic students whose teacher had received instruction with regards to: decreasing the severity of asthma (P = 0.000), lower incidence of exercise-induced asthma (P = 0.0001), increase in the results of physical fitness tests (P = 0.009). In the group of asthmatic children from 13 to 14 years old, statistically significant differences were also reported in favor of students whose teachers had received training with the following results: drop in exercise-induced asthma (P = 0.00016), higher values in the physical fitness tests of all students (P = 0.00000) and also in students with asthma (P = 0.009436). At the end of the study, both groups exhibited a significant increase in the maximum expiratory flow measurements of students in the group aged 9 to 12 years (P = 0.000) and in the group aged 13 to 14 years old (P = 0.001).

Conclusions: Teachers with knowledge about asthma had a positive impact on physical fitness and lowed exercise-induced asthma in students.

447

Asthma Knowledge among Parents and/or Caregivers of Asthmatic Children Attending a Practical Allergy Course
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Background: Asthma is one of the most frequent chronic diseases, with worldwide prevalence of 1 to 18%. Patient and the patient’s family education is considered by all International Guides fundamental to achieve this disease control. The aim of this study is to assess the asthma knowledge among parents and/or caregivers of pediatric asthmatic patients before and after attending to a Practical Allergy Course given at Hospital Infantil de Mexico Federico Gomez by the Pediatric Allergy Department.

Methods: Transversal Study that included 115 persons attending to a Practical Allergy Course that answered the previously validated instrument to assess the asthma knowledge among parents or caregivers NAKQ (Newcastle Asthma Knowledge Questionnaire); its Spanish version consisting in 31 questions; before and after the practical course. A descriptive analysis was made; usefulness of the course was determined by x². Statistic package used was SPSS 17.

Results: A total of 115 questionnaires were applied, only 99 were properly answered and were included in the analysis; from these 35 were male and 64 female; 80% with high-school and middle school schooling; 92% were small families with 1 to 3 children; 90% of the families had only one child with asthma; 63% was receiving the practical course for the first time. Before attending the practical course the mean answered questions was 30 and after attending the mean answered questions was 31 (LR = 57.465; P < 0.000); for the first evaluation the mean correct answers was 19 and the latter 22 correct answers, finding statistical significant differences (LR = 30.253; P < 0.000).

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Conclusions: We found improved asthma knowledge among parents and caregivers of asthmatic children after attending to a Practical Allergy Course.

Ezhengtricity 2010: a Free Novel Way to Confidentially Administer, Track, Receive and Score Medical Questionnaires Instantly
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Background: Medical questionnaires are important for assessing allergy patients. However, current methods of administering questionnaires are cumbersome, expensive, and laborious to accurately administer, track and score. eZhengtricity is a simple Google Documents based workflow, coupled with customized Excel formulas, that allow researchers to create, collect and score confidential health questionnaires that are globally accessible, with minimal setup time and maintenance.

Methods: eZhengtricity utilizes a Google Documents account as a platform to create online questionnaires. Google automatically hosts the online questionnaire with a unique URL that can be provided to patients. The researcher provides patients with a unique study ID that is used to submit questionnaire responses. By using a unique study ID, researchers ensure confidentiality of questionnaire data. Patient questionnaire responses are instantly submitted online to a secured "Cloud" database. In the Cloud database, the data is automatically sorted, scaled and scored by custom Excel formulas. Researchers can instantly access the database and download results in a variety of formats including PDF and XLS for further analysis using the researcher’s statistical software of choice.

Results: eZhengtricity provided questionnaire scores from submitted questionnaires instantly, while paper versions required manual double entry and manual sorting of patient data for analysis. Better overall quality of patient responses was obtained with eZhengtricity compared to paper questionnaires. Submitted responses to eZhengtricity had 100 percent completion while submitted paper responses had incomplete responses. Patient compliance for eZhengtricity was comparable to paper questionnaires. eZhengtricity also allowed monitoring of patient’s progress on completing questionnaires.

Conclusions: The flexibility and robustness of eZhengtricity complement longitudinal and cross-sectional studies. Compared to paper questionnaires, eZhengtricity is a cost effective, logistically easy, and superior way to administer confidential questionnaires.

Usefulness of Asthma Control Test Questionnaire, FEV1 and Exhaled Nitric Oxide Level (FeNO) for the Clinical Assessment of Elderly Asthma
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Background: Asthma remains a prevalent disease with significant morbidity and mortality, therefore numerous markers or measurements for the evaluation of its severity are available. Functional parameters, clinical assessment and biomarkers of inflammation are the most used. Also the diagnosis and treatment of asthma are often focused on young patients. This study was intended to determine the usefulness of patient-based questionnaire, Asthma Control Test score (ACT), forced expiratory volume in 1 second (FEV1) and exhaled nitric oxide (FeNO) for clinical assessment of elderly asthma patients.

Patients and Methods: Sixty seven (67) patients with a diagnosis of asthma more than 65 of age were enrolled. They performed spirometry, FeNO measurement and answered the ACT questionnaire. ACT is scored on a scale from 5 to 25 with higher values reflecting better control. Spirometry measures that met the American Thoracic Society criteria were included. FeNO was measured with values ≥35 ppb indicating probability of airway inflammation. Qui-square test was used for statistical analysis.

Results: 67 patients (15% female), mean age of 72.3 (65–89) were included. 25 patients (37.3%) were very poorly controlled, ACT 15 ± 15 and mean values of FEV1 81.5±21.5 (% predicted) and mean FeNO of 41 ± 35 ppb. Thirty patients (44.8%) were not-well-controlled, ACT 16 to 19, FEV1 89% ± 16.8, FeNO of 40 ± 36 and 12 patients (17.9%) were well-controlled, ACT ≥ 20, FEV1 93.3 ± 16.8 and FeNO of 44 ± 35. FEV1 as >80% of predicted in 62.4% of patients (ACT 7–25) and 75% of patients with ACT ≥ 20 had FEV1 > 80%. The relation between ACT and FEV1 in this study was statistically significant (P = 0.014). There was no correlation when we evaluated ACT/FeNO and FEV1/FeNo variables (P = 0.45, 0.41 respectively).

Conclusions: A good correlation was found between ACT and FEV1, with higher ACT scores reflecting less bronchial obstruction. FeNO values had no correlation with ACT or FEV1, indicating that this marker of inflammation had less interest for assessment of asthma control in these elderly patients. In spite of these data, we still advise that the clinical assessment of asthma should be based on a combined approach that involves clinical aspects, functional parameters and biomarkers of inflammation, because elderly patients may have reduced symptom perception and have multiple co-morbidity.