



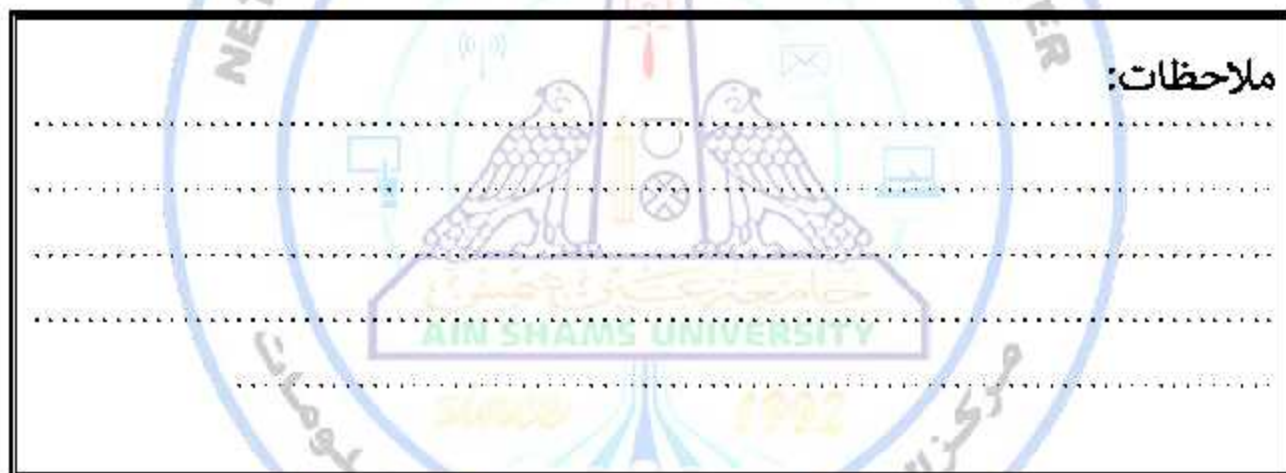
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تم رفع هذه الرسالة بواسطة / سنوي محمود عقل

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى

مسئولية عن محتوى هذه الرسالة.

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Validation of Asthma Management Approach According To Risk Factors, a preliminary study

Thesis

*Submitted for partial fulfillment of MD degree in
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سَبَّحَانَكَ لَا إِلَهَ إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Abbreviations

Abb.	Full term
ACQ.....	Asthma Control Questionnaire
ACT.....	Asthma Control Test.
AQLQ.....	Asthma Quality of Life Questionnaire
ARST	Asthma Risk Stratification Therapy
ATAQ.....	Asthma Therapy Assessment Questionnaire
CBC	Complete Blood Count.
ER.....	Emergency Room
FEV1.....	Forced Expiratory Volume in first second.
FVC.....	Forced Vital Capacity
HCPs.....	Health care practitioners
HRQol.....	Health Related Quality of life
ICS.....	Inhaled Corticosteroids
LABA	Long-acting Beta Agonist
LASS.....	Lara Asthma Symptom Scale
M.dose	Medium dose
MDT.....	Multidisciplinary Team
MMAS-8	Morisky Medication Adherence Scale
NAEPP EPR-3....	National Asthma Education and Prevention Program. Expert Panel Report 3
SABA	Short-acting Beta Agonist
T.B	Tuberculosis
TLC.....	Total Lung Capacity

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INTRODUCTION

Asthma symptoms are variable in intensity within a short time and the response to treatment, is exempted as "control", based on patient' subjunctives according to GINA 2018. Patient may perceive asthma as sever if he/ she has intense or frequent symptoms but this does not necessarily indicate a non-controlled diseases and some other patients, despite maximum therapy, still may show minimal symptoms or less exacerbations. This is because severity is not static and may change over months or years or as different treatments become available (*Global Initiative for Asthma, 2018*).

Many patients with mild asthma, on low dose ICS are at risk of severe exacerbations (*Dusser et al., 2007*), low adherence to ICS (*Horne, 2006*) and an airflow limitation. The frequency of exacerbations (*Jackson et al., 2011*), atopy or allergic rhinitis, previous hospital admission or intubation (*Adams et al., 2000*), history of brittle asthma, elderly (*Boulet, 2016*) comorbid disease/s and smoking or occupational hazards (*Soriano et al., 2005*) are among the independent risk factors for asthma worsening symptoms and possible decline of lung function.

Addressing the role of ICS in management and prevention of asthma exacerbation was superior to adding LABA. The combination of a LABA and a lower dose of ICS result is significantly greater improvement of peak expiratory

flow and significantly less growth impairment but did not significantly decrease the risk of exacerbations requiring oral corticosteroids, compared with a double dose of ICS (**Chroinin et al., 2009**)

Asthma control is level of extent to which asthma manifestations observed in the patient or have been reduced or removed by the treatment (**Reddel et al., 2009**). The movement from a “one size fits all” symptom-based strategy to a patient-centered individualized approach hasn’t resulted in official and widely accepted recommendations. One of the reasons that could explain this unsatisfactory situation is the limited importance that guidelines place on asthma heterogeneity. These unfortunates probably present us with a rather unpleasant dilemma. When lung function measurements (such as spirometry and peak expiratory flow variability) are used, clinicians tend to overestimate the patients' improvement and underestimate their deterioration (**Juniper et al., 2004**). This highlights the need for validated tools for the assessment of asthma control (**Papaioannou et al., 2015**). The present study aims to evaluate asthma risk stratification therapy ARST as standard of care provided to asthma patients with a primary consideration for risks future management and to assess the outcomes as control and severity in somewhat objective predictors compared to GINA approach.

AIM OF THE WORK

A) Primary aim:

- To validate assessment of asthma control using risk stratification approach compared to current GINA guidelines (2018).

Outcome: control assessment by

1. History of exacerbation.
2. FEV1 decline / year.
3. Adherence to medications using MMAS-8 score.
4. Asthma control assessment according to GINA 2018.

B) Secondary aim:

- To assess severity of asthma.

Outcome:

- Mild-moderate or severe according to level of medication the patient received.
- Assessment of Asthma control test (ACT) in 12 months therapy according to operational definition of asthma severity.

REVIEW OF LITERATURE

Bronchial Asthma

Definition of asthma:

Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation (*Global Initiative for Asthma, 2021*).

Description of asthma:

Asthma is a common, chronic respiratory disease affecting 1–18% of the population in different countries. Asthma is characterized by variable symptoms of wheeze, shortness of breath, chest tightness and/or cough, and by variable expiratory airflow limitation. Both symptoms and airflow limitation characteristically vary over time and in intensity. These variations are often triggered by factors such as exercise, allergen or irritant exposure, change in weather, or viral respiratory infections.

Symptoms and airflow limitation may resolve spontaneously or in response to medication, and may sometimes be absent for weeks or months at a time. On the other hand, patients can experience episodic flare-ups

(exacerbations) of asthma that may be life-threatening and carry a significant burden to patients and the community. Asthma is usually associated with airway hyperresponsiveness to direct or indirect stimuli, and with chronic airway inflammation. These features usually persist, even when symptoms are absent or lung function is normal, but may normalize with treatment (*Global Initiative for Asthma, 2021*).

Assessment of asthma control:

For every patient, assessment of asthma should include the assessment of asthma control (both symptom control and future risk of adverse outcomes), treatment issues particularly inhaler technique and adherence, and any comorbidities that could contribute to symptom burden and poor quality of life.

Lung function, particularly forced expiratory volume in 1 second (FEV₁) as a percentage of predicted, is an important part of the assessment of future risk.

Asthma control has two domains: symptom control (previously called ‘current clinical control’) and future risk of adverse outcomes. Both should always be assessed. Lung function is an important part of the assessment of future risk; it should be measured at the start of treatment, after 3–6 months of treatment (to identify the patient’s personal best), and periodically thereafter for ongoing risk assessment. (*Global Initiative for Asthma, 2021*)

Assessing asthma symptom control

Asthma symptoms such as wheeze, chest tightness, shortness of breath and cough typically vary in frequency and intensity, and contribute to the burden of asthma for the patient. Poor symptom control is also strongly associated with an increased risk of asthma exacerbations.

Asthma symptom control should be assessed at every opportunity, including during routine prescribing or dispensing. Directed questioning is important, as the frequency or severity of symptoms that patients regard as unacceptable or bothersome may vary from current recommendations about the goals of asthma treatment, and differs from patient to patient.

To assess symptom control ask about the following in the past four weeks: frequency of asthma symptoms (days per week), any night waking due to asthma or limitation of activity, and frequency of reliever use for relief of symptoms. In general, do not include reliever taken before exercise, since this is often routine (*Global Initiative for Asthma, 2021*).

Asthma control test

The ACT is a multidimensional, standardized, and validated tool and the most widely used tool for assessing asthma control in patients with asthma older than 12 y (*Revicki and Weiss, 2006*). Similar to most asthma assessment tools, the ACT quantifies asthma control as a continuous variable and