

Asthma Management in Pregnancy: Young Female Doctors Knowledge and Practice

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Abstract

Background: Optimal asthma control in pregnant women is very much essential for the good health of both mother and the fetus. Maternal and fetal complications occur due to poor control of asthma. There are concerns that management of bronchial asthma in pregnant women should be optimal by the health professionals.

Objective: The aim of the study was to evaluate the knowledge and practices of young female doctors about the bronchial asthma management in pregnancy.

Study Design: Randomized evidence based.

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Study Setting: Punjab Public Service Commission (PPSC) interviews for women medical officers and female doctors working in different medical units and chest unit of Mayo Hospital – a tertiary care hospital affiliated with King Edward Medical University, Lahore.

Materials and Methods: A questionnaire based survey of knowledge and practices of one hundred and one female doctors in the management of bronchial asthma was made. Amongst these, 32 doctors were FCPS – 1 in medicine and gynecology. Remaining 69 doctors were in the pipeline and they have completed one year house job in different specialties. The case scenario was “Asthma management approach during pregnancy in a stable patient of moderate severity”.

Inclusion Criteria

1. All those female doctors who have completed one year house job.
2. Female doctors working in gynecology, medicine, surgery and allied specialties.

Results: Overall 14 (13.6%) doctors {5 (35.7%) PGs and 9 (64.3%) Non PGs} have the standard prescription of inhaled corticosteroids with long acting inhaled B₂ agonists and montelukast as controller medication and short acting inhaled B₂ agonist as needed as reliever medication according to the standard guidelines.

Conclusion: The majority of young female doctors had the suboptimal knowledge and practice of asthma management in pregnancy. We suggest initiating the

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training programs to optimize their knowledge and practices.

Keywords: Bronchial Asthma, pregnant women,

moderate, PGs (Postgraduate i.e. FCPS – 1) Non PGs (MBBS + one year house job), nebulization ICS – inhaled corticosteroids, TDS – thrice daily, bd – twice daily, Tab – Tablet. Inj- injection, OD – once daily, antibiotics.

Introduction

Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role, in particular, mast cells, eosinophils, T Lymphocytes, macrophages, neutrophils and epithelial cells. In susceptible individuals, this inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or in the early morning. These episodes are usually associated with widespread but variable airflow obstruction that is often reversible either spontaneously or with treatment. The inflammation also causes an associated increase in the existing bronchial hyper-responsiveness to a variety of stimuli.^{1,2}

According to the World Health Organization (WHO), almost 300 million people suffer from asthma worldwide. The prevalence is continuously rising and is expected to rise by a further 100 million by the year 2025. Annually, the World Health Organization (WHO) has estimated that 15 million disability –adjusted life – years are lost and 250,000 asthma deaths are reported worldwide.³ Approximately 500,000 annual hospitalizations are due to asthma. Almost 80% of asthma related deaths occur in low and lower middle income countries and nearly 50 million people with asthma are known to reside in Southern and Central Asia.⁴

Asthma affects nearly 10% of the population, although it is seen in different rates in various communities. Highest prevalence was seen in developed countries, including UK, Australia and New Zealand. Lowest prevalence was seen in Asian, African and Eastern European countries.⁵ Asthma prevalence of 8% was recorded among Pakistani children.⁶ Despite the improvements in understanding pathogenesis, prevention and treatment of asthma, there has been a steady increase in the prevalence, morbidity and mortality associated with asthma in the last 20 years.⁷ Under diagnosis and inappropriate treatment are the major factors contributing to morbidity and mortality due to asthma.

Asthma is the most common pulmonary disease encountered during pregnancy, occurring in 3 to 8 per-

cent of pregnant women. When women with asthma become pregnant, one – third of the patients improve, one-third worsen, and the last third remain unchanged.⁸ A number of investigators have found that asthma during pregnancy is associated with an increased incidence of perinatal mortality and increased risks of hyperemesis, vaginal hemorrhage, preeclampsia, complicated labor, neonatal mortality, prematurity, hypertensive disorders, and low birth weight infants. There is a relatively small but significant increase in the complications of pregnancy in asthmatic women. However, neither the effect of pregnancy on asthma nor the effect of asthma on pregnancy should be considered a contraindication to pregnancy for patients with asthma.⁹ Studies have shown that pregnant asthmatic women have an increased risk of adverse perinatal outcomes, whereas controlled asthma is associated with reduced risks. Managing asthma during pregnancy is unique because the effect of the illness and the treatment on the developing fetus as well as the patient must be considered.¹⁰

It has been reported that poor knowledge of doctors who do not provide education about self-management of asthma to patients is an important barrier to effective treatment and management of asthma. Differences exist in prescribing patterns of anti-asthma

Material and Methods

One hundred and one female doctors were included in this study. Amongst 101 doctors, 32 have passed FCPS – 1 while remaining 69 were in the pipeline. Age ranged between 26 – 35 years.

A questionnaire based survey of knowledge and practices of asthma management of these doctors was made. The case scenario was:

“Asthma management approach during pregnancy in a stable patient of moderate severity”.

Inclusion Criteria

- 1- All those female doctors who have completed one year house job.
- 2- Female doctors working in gynecology, medicine, surgery and allied specialties.

medications across different countries, particularly under – use of asthma controller medications¹¹. The gap in knowledge about asthma and its management is well recognized. Many international guidelines have been published with the aim to standardize the diagnosis and management of asthma with emphasis on patient education and providing self management plans to patients.¹²

Objective

The aim of the study was to evaluate the knowledge and practices of young female doctors in the management of bronchial asthma in pregnancy.

Study Design

Randomized evidence based

Study Setting

Punjab Public Service Commission (PPSC) interviews for women medical officers and female doctors working in different departments of medicine and chest medicine of Mayo Hospital, Lahore.

Results

The study results were as followed:

- 1. Medication**
- 2. Assessment and monitoring**
None of the study doctors mentioned about the assessment of the severity of the patient by the peak flow meter, spirometry and oximetry. Monitoring of the disease after starting the therapy was not described.
- 3. Patient Education**
Nobody thought it essential for the patients.
- 4. Avoidance of risk factors**
Nobody mentioned about these factors and their prevention.

Table 1:

Medication	Dose / Daily	No. of Prescribing Drs	%
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Oxygen	Not mentioned	55 (17 PGs + 38 non PGs)	54.46
B ₂ agonist nebulization	Not mentioned / TDS	50 (24 PGs + 26 non PGs)	50.5
Anticholinergic agents Nebulization (ipratropium Bromide)	Not mentioned / TDS	27 (3 PGs + 24 non PGs)	26.73
Ventolin Tab	2 – 4 mg / 6hourly	2 (1 PG + 1 non PG)	1.98
Ventolin Inj	1 × 6 hourly	2 (0 PG + 2 non PGs)	1.98
Syp. Ventolin	1tsf * tds	2 (1 PG + 1 non PG)	1.98
Inhaled steroids	2 puff * bd	48 (19 PGs + 29 non PGs)	47.53
Oral steroids	4 – 6 tablets / day	13 (4 PGs + 9 non PGs)	12.87
I/v steroids	200 – 500 mgm / 6 – 8 hourly	40 (10 PGs + 30 non PGs)	39.60
Long acting B ₂ agonist inhaler	2 puff * BD	14 (5 PGs + 9 non PGs)	13.6
Short acting B ₂ inhaler	2 puffs * as needed	31 (6 PGs + 25 non PGs)	30.7
Tab theophylline	1 * tds	14 (6 PGs + 8 non PGs)	13.86
Tab Montelukast	1 * od	18 (7 PGs + 11 non PGs)	17.82
Antibiotics	Amoxiclav 625 mg tds Clarithromycin 500 mg bd Injectable (ceftriaxone 1 gm bd)	38 (11 PGs + 27 non PGs)	37.62
Mgso ₄	Not mentioned	9 (1 PG + 8 non PGs)	8.91

Discussion

Asthma is a common inflammatory condition. It is an important cause of morbidity and mortality worldwide. The basic goal of asthma treatment is to achieve and maintain good clinical control.¹³ Poorly controlled asthma has an adverse effect on the fetus. A detailed knowledge of asthma management is needed by the doctors. Patient's education about asthma control is essential. Control of environmental factors and comorbid conditions those affect asthma are very much important.

Medication during pregnancy is of great concern both for mother and fetus. Appropriate use of B₂ agonists, inhaled glucocorticosteroids, leukotriene receptor antagonists and sustained release theophylline are not associated with increased incidence of fetal abnormalities.¹⁴ Aggressive treatment is needed for acute exacerbations of asthma in order to avoid fetal hypoxia. This includes nebulized rapidly acting B₂ agonists, oxygen and systemic glucocorticosteroids when necessary.

For the management of moderately persistent asthma the treatment options include rapidly acting B₂ agonists as needed for the relief of symptoms and controller medications in the form of low dose inhaled steroids plus long acting B₂ agonists or medium or high dose inhaled corticosteroids or low dose inhaled corticosteroids plus leukotriene modifiers or low dose inhaled corticosteroids plus sustained release theophylline.¹⁵

Moderately persistent asthmatic patients present with dyspnea which restricts their usual activity and the peak flow rate is between 40-60% of the predicted or personal best. They usually require OPD or emergency visits. Consider consultation at this step.¹⁶

In our study amongst 101 doctors, overall 14 (13.6%) doctors have the standard prescription of inhaled corticosteroids with long acting beta 2 agonists (salmeterol) and montelukast. Remaining 87 doctors did not have the optimal knowledge of severity and relevant medications of the asthmatic patients. Nobody mentioned about patient education, assessment and monitoring of treatment and prevention of the precipitating factors.

Hardly a few studies are available for comparison in Pakistan. Nationally and Internationally majority of studies are about the knowledge and practices of General practitioners for asthma management. Nizar Bularni et al study¹⁷ showed that overall 28.6% of general practitioners had adequate knowledge of core concepts

of asthma, and only 10.4% of these doctors had adequate practices in asthma management. International studies like J R Coates et al,¹⁸ A Ayuk et al¹⁹ and Angelina S Lim et al²⁰ showed poor knowledge of the general practitioners about the asthma management. Analyzing the results of our and others above mentioned studies pointed out the suboptimal knowledge and poor practices of asthma management including special situation of pregnancy by the young doctors and the general practitioners. The results of our study force us to think about that the young doctors and general practitioners must be equipped with optimal knowledge and practices of asthma management because they are the back bone of medical profession.

Conclusion

The majority of young female doctors had the suboptimal knowledge and practices of asthma management in pregnancy. We suggest initiating the training programs to optimize their knowledge and practices.

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