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Evaluation Of Asthma Management And Control In Adults In And Around Pune City Of Maharashtra.

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ABSTRACT

Multiple protocols have been devised to diagnose, treat and monitor asthma. However, the control remains poor in majority because of lack of awareness about the guidelines and the largest fraction of patients in India do not recognise their symptoms timely and visit non specialists for symptomatic relief. This was a cross-sectional study which included adult patients of Asthma attending OPD of Respiratory Medicine in a tertiary care hospital in Pune from 2017 to 2019 which was a total of 200 patients. Majority of the patients visited GPs, 72 (36%) and only 24 (12%) patients visited a respiratory physician. Spirometry was performed in 100 (50%) patients, majority by respiratory physicians, 36 (90%), followed by 45 (60%) of physicians. Maximum were correctly diagnosed by respiratory physicians, 22(91.67%) and minimum by alternate medicine practitioners, 6(23.08%). 106 (53%) of the doctors made the correct diagnosis based on GINA guidelines. Maximum uncontrolled asthma was seen in patients visiting GPs (41%) and minimum amongst respiratory physicians (8%). The control of asthma in patients was found to be suboptimal. This was due to failure to reinforce inhaler technique, underuse of ICS, incorrectly interpreted spirometries. Hence, there is a need to educate doctors who treat asthma patients.

Keywords: Asthma, Management, Control, Physician

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INTRODUCTION

Asthma is a heterogeneous disease, usually characterised 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 [1] 300 million people are known to have asthma and a 100 million more are estimated to add to the list by the year 2025 [1]. Despite achieving multiple milestones in the field of diagnosis and management of bronchial asthma over the course of years, asthma control in India mostly remains poor.

Although multiple standard protocols and algorithms have been devised to diagnose, treat and monitor asthma, the control remains poor in majority because of lack of awareness about the guidelines and due to the fact that the largest fraction of patients in India do not recognise their symptoms timely and visit non specialists usually for SOS, symptomatic relief.

As compared to many other respiratory illnesses, which are progressive and difficult to control, asthma is a disease which can actually be under good control if diagnosed, managed and treated according to guidelines and with special focus on scheduling follow up visits and monitoring progression or regression of the disease and changing therapy in time. Identification of common and specific, precipitating factors, checking, correcting and reinforcing inhaler technique on each visit markedly improves asthma control. Providing the patients with a patient-specific asthma plan along with proper asthma education also contribute to well controlled asthma.

The questionnaires are usually based on studies and sometimes do not provide an insight into the real world practices. Hence, this study is being done based on review of prescriptions and relevant documents apart from questionnaires which are more likely to provide us with the real world scenario about asthma management and control practices.

MATERIALS AND METHODS

This was a cross-sectional study which included adult patients of Bronchial Asthma attending OPD of Respiratory Medicine in Dr. D. Y. Patil Medical College, Pune from September 2017 to August 2019.

Inclusion Criteria: All patients of Bronchial Asthma >12 years of age, whose diagnosis has been confirmed by our study protocol and who have been on treatment with follow up for 6 months-1 year were included in the study.

Exclusion criteria: All patients with significant co-morbidities like COPD, CAD, ABPA, and Aspergillosis; difficult to treat asthma and patients who were not able to perform spirometry were excluded from the study.

Study Design: Written and informed consent was obtained from all patients of Bronchial Asthma >12 years of age, whose diagnosis has been confirmed by our study protocol.

Purpose of study was explained to the patient in a language understood by the patient.

The asthma management in the patients in the form of diagnosis, treatment and control was assessed with the help of actual prescriptions and relevant investigation records.

Diagnosis and status of control in patients was confirmed through the study protocol according to GINA guidelines and the same was compared with the doctor's diagnosis, treatment and control using standard statistical methods.

Data collection was done as per convenience sampling. One day in the week was fixed for data collection and all cases coming to OPD on that day were studied. Assuming a proportion of 60% of partially controlled asthma patients, with an acceptable error of 7% on either side, at a confidence level of 95%, the sample size works out to be 189. Catering for non-response, a final sample size of **200** was proposed. And a total of 200 patients were studied.

RESULTS AND DISCUSSION

A total of 200 patients of Bronchial Asthma treated in and around Pune city of Maharashtra was studied.

Majority of the patients visited GPs, 72 (36%) followed by physicians, 55 (27.5%). Only 24 (12%) patients visited a respiratory physician.

DIAGNOSIS

Clinical Assessment

History was mentioned as part of clinical notes in the form of symptoms in 199 out of 200 patients, except for one alternate practitioner. Clinical features were mentioned in 100% respiratory physicians, 78 (95.12%) GPs and in 15 (46.87%) alternate practitioners.

Diagnostic Method

Spirometry was overall performed in 100 (50%) patients, majority by respiratory physicians 36 (90%), followed by 45 (60%) physicians, 17 (20%) GPs and 2 (6.25%) alternate practitioners.

Use of GINA Guidelines for diagnosis

106 (53%) of the doctors made the correct diagnosis in accordance with GINA guidelines. Maximum were correctly diagnosed by respiratory physicians, 22(91.67%) and least by alternate medicine practitioners, 6(23.08%).

MANAGEMENT

Inhaled Corticosteroids (ICS)

91(45.5%) patients were prescribed ICS, out of these, 91(45.5%) were prescribed regular ICS and 90 (45%), irregularly. ICS was regularly prescribed most commonly by respiratory physicians, 22 (91.66%) and by none of the alternate medicine practitioners.

Bronchodilators

SABA (Short Acting Beta2 Agonist) was prescribed in 86 (43%) patients, out of which 23(26.74%) were taking it regularly and 63 (73.25%) were taking it SOS. Alternate practitioners prescribed regular SABA to the least number of patients, 1 (4.35%). Physicians prescribed maximum regular SABA, 8 (34.78%). Respiratory physicians and GPs prescribed regular SABA to 3 (13.04%), 7 (30.43%) patients respectively.

Inhalation Devices

The most common device prescribed for inhalation therapy was MDI (Metre Dose Inhaler), in 126 (63%) patients. Out of these, only 26(13%) patients were prescribed MDI with a spacer, of which, the maximum, 16 (66.66%) were by respiratory physicians.

DPI were prescribed in 52 (26%) cases, most commonly prescribed by physicians, 35(63.63%) and by none of the alternate medicine practitioners.

Nebulisation

82 (41) % patients were prescribed nebulisation, maximum by alternate medicine practitioners, 24 (76%), followed by physicians in 33 (60%) patients and least by respiratory physicians, in 8 (33.33%) patients.

Oral Corticosteroids

165 (82.5%) patients were prescribed oral corticosteroids for short (<1 week), medium (1 week-1 month) or long term (>1 month). Only 5 (2.5%) were prescribed long term steroids whereas 39 (19.5%) and 121 (60.5%) were prescribed medium and short term steroids respectively. Maximum prescriptions of oral corticosteroids were given by GPs, 56 (39.93%) followed by physicians, 46 (27.87%).

Inhalation Technique

102 (51%) were advised follow up visits, 73 (36.5%) patients' inhaler technique were checked.

Assessment of Control

38(19%) were advised follow up spirometries or PEFR to monitor control, and only 2(1%) were given ACT questionnaires. 8 (4%) patients were well controlled, 92 (46%) were partially controlled, 100 (50%) were uncontrolled. Maximum uncontrolled asthma was seen in patients visiting GPs (41%) and minimum amongst respiratory physicians (8%).

This was a hospital based study conducted in 200 adult patients of bronchial asthma attending OPD of respiratory medicine in a tertiary care hospital in Pune, Maharashtra.

In our study it was observed that majority of the patients, 72(36%) visited GPs followed by physicians, 55 (27.5%), alternate medicine practitioners, 26 (13%), respiratory physician, 24 (12%) and lastly, multiple practitioners, 23(11.5%). The higher number of patients visiting the GPs and physicians can be attributed to their relatively easier availability. Visits to multiple doctors was possibly due to persistent symptoms and referrals.

As far as diagnosis is concerned, GINA guidelines [1] stress upon consideration of history, clinical features as well as spirometry to make a diagnosis of bronchial asthma.

199 (99.5%) practitioners mentioned history as part of their clinical notes, mainly in the form of symptoms, barring one alternate medicine practitioner. Spirometry, which is the gold standard for diagnosis was overall done in 100(50%) patients, 36(90%) patients who visited a respiratory physician and in 45(60%),17(20%), 2(6.25%) patients visiting physicians, GPs and alternate practitioners respectively. A study by Salvi et al [2] mentioned that 75% patients never had a pulmonary function test. Barthwal et al [3] in their study mentioned that 53.3% of physicians and 17.5% of GPs did spirometry to make a diagnosis of asthma. So, in the present study, although almost all doctors mentioned history in their clinical notes in the form of symptoms and 50% did spirometry, still incorrect diagnosis were made in 47% patients possibly due to not following the key questions to be asked in the history as per guidelines and due to incorrectly performed and interpreted spirometry.

Overall 106 (53%) doctors made the correct diagnosis, out of which, maximum correct diagnoses were made by respiratory physicians in 22 (91.67%) patients and minimum by alternate practitioners, 6 (23.08%). 31 (56.36%) were correctly diagnosed by physicians and 33 (45.83%) by GPs. There was a statistically significant difference of diagnosis between different practitioners.

As far as the treatment was concerned, 91(45.5%) patients were prescribed ICS as monotherapy or part of combination therapy. 91(45.5%) patients were prescribed regular ICS and 90 (45%) patients were prescribed irregularly. ICS were regularly prescribed most commonly by respiratory physicians, 22(91.66%) and by none of the alternate medicine practitioners. In a study by Barthwal et al [3], 92.5% and 83.3% (GPs and physicians respectively) were on inhaled and oral bronchodilators, 96.6% and 30% on regular ICS.

165 (82.5%) patients were prescribed oral corticosteroids for short (<1 week), medium (1 week-1 month) or long term (>1 month). Only 5 (2.5%) were prescribed long term steroids whereas 39 (19.5%) and 121 (60.5%) were prescribed medium and short term steroids respectively. As seen previously, maximum prescriptions were given by GPs, 56 (39.93%) followed by physicians, 46 (27.87%). So, despite the fact that OCS are recommended by GINA [1] in the stepwise approach, overuse and misuse of OCS is very common possibly

due to their easy availability, less cost and the faster relief that they provide, due to inadequate inhalation therapy and suboptimal dosages. In the study done by Barthwal et al [3], it was seen that 55% and 40% patients visiting GPs and physicians respectively were prescribed OCS along with ICS, which correlates with our study findings.

Asthma control can be achieved by various methods such as regular checking and correcting inhaler technique, advising regular follow ups, administering questionnaires such as ACT, asthma education and doing follow up PEFr or spirometry to see progression. In the present study, 102 (51%) were advised follow up visits, inhaler technique was checked in 73(36.5%) patients, 38(19%) of patients were advised follow up spirometries or PEFr to monitor control, and only 2(1%) were given ACT questionnaires. Inhaler technique was checked mostly by physicians, in 28 (50.90%) cases and by none of the alternate medicine practitioners. In 14 (58.33%), patients seen by respiratory physicians, follow up was advised whereas in only 28 (38.88%) patients, GPs advised follow up. ACT was given only by two doctors (physician and respiratory physician). Follow up spirometries were done mostly by respiratory physicians, 7 (29.16%) cases and least by alternate medicine practitioners, 2 (7.69%) patients. According to Barthwal et al [3] in their study, only 16.6% of physicians and 0% GPs monitored the patients according to GINA guidelines which correlate with the findings of our study.

Asthma control, as per GINA [1] could be well controlled, partially controlled or uncontrolled in the present study, 8 (4%) patients were well controlled, 92 (46%) patients were partially controlled, and 100 (50%) were uncontrolled. Of these, maximum number of uncontrolled asthma was seen in patients visiting GPs, 41 (41%). Respiratory physicians saw 8 (8%) of the uncontrolled cases. Same trend was seen in partially controlled asthma. Well controlled asthma was seen in none of the patients who visited physicians and in 25% cases seen by each respiratory physicians, GPs, alternate practitioners and multiple doctors. P-value in this case showed a statistically significant difference in asthma control between different doctors. Salvi et al [2] in their study, observed that 91% of the asthmatics in India perceived their asthma to be under control, but in reality, none of them had controlled asthma. This correlates with our finding of very few well controlled asthma patients in our study.

CONCLUSION

The control of asthma in patients in and around Pune city was found to be suboptimal. This was attributed to due to multiple reasons including failure to reinforce correct inhaler technique, inadequate follow up done, overuse of SABA, underuse of ICS, incorrectly performed and interpreted spirometries. Hence, there is an urgent need to educate all doctors who treat asthma patient to be updated with latest guidelines on management of asthma.

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