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## Study of Adherence of Patients of OAD (Obstructive Airway Diseases) to Inhalational Devices.

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### ABSTRACT

Inhalational medicines are the mainstay of treatment of OAD. It is however a common observation of the clinicians that many patients are hesitant to use these devices or tend to stop them. As poor adherence to a inhalational medication regimen and inhalation technique are closely related to inadequate disease control, poor health outcomes, increasing utilization of health services and economic loss due to ineffective treatment. It is important to find out the reasons for such non-adherence. Therefore we thought to evaluate these factors in our patients so as to improve adherence to inhalational devices through proper counseling. After getting informed consent from patients, 102 patients were enrolled in the study. Predefined Questionnaire in patients own language were given to the patient and that was filled by marking true or false. This questionnaire included questions assessing adherence and non-adherence to inhalational therapy was then checked. Data of all such patients was analyzed at the end. Out of 102 patients 61 patients(59.80 %) were adhere to inhalational therapy and 41 patients (40.20 %) were non adherence to Inhalational therapy. And common reasons for adherence and non adherence were identified.

**Keywords:** adherence, inhalation , medications, spirometry, obstructive airway disease.

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## INTRODUCTION/ RATIONAL

Today, inhalational medicines are the mainstay of treatment of OAD. A wide variety of inhalational devices are available for use, the most popular being MDI (metered dose inhalers) and DPIs (dry powder inhalers). It is however a common observation of the clinicians that many patients are hesitant to use these devices or tend to stop them [1]. It is important to find out the reasons for such non-adherence. This study will give us an idea about using correct strategies to improve adherence. Inhalation medication have many advantage over oral medications [2]. It is our observation that many patients prefer / stick to oral medication than inhalational devices in spite of proper counseling. Patients give many reasons why they do so.

As poor adherence to a inhalational medication regimen and inhalation technique are closely related to inadequate disease control, poor health outcomes, increasing utilization of health services and economic loss due to ineffective treatment and abstinence from wor k[3]. Therefore we thought to evaluate these factors in our patients so as to improve adherence to inhalational devices through proper counseling.

### Aims and Objectives

- To study adherence of patients of OAD to inhalational devices and study the motives responsible for the adherence.
- To study non-adherence of patients of OAD to inhalational devices and to assess different reasons for non-adherence.

## MATERIALS AND METHODS

The study was done at Dr. D.Y. Patil Medical College and Hospital, Pimpri, Pune. Patients included in study were selected from all the patients attending OPD of Dept. of Pulmonary Medicine or admitted to ward. Afre taking consent 102 patients were enrolled in the study. Old documentation, spirometry report and brief history of patient were obtained. Predefined Questionnaire in patients own language were given to the patient and that was filled by marking true or false. This questionnaire included questions assessing adherence and non-adherence to inhalational therapy was then checked. After completion of the questionnaires sheet were collected back from the patients. Data of all such patients was analyzed at the end.

### Inclusion criteria :

- Patients of OAD attending to OPD and wards of Pulmonary medicine department.
- Those patients who had been prescribed inhalation devices as a long term regular treatment (irrespective of the type of inhaler used) for chronic respiratory disease.
- Patients willing to give consent & willing to follow the study protocol.

### Exclusion criteria:

- Patients who were not willing to give consent & not willing to follow the study protocol.
- Those patients who never used inhalation devices.

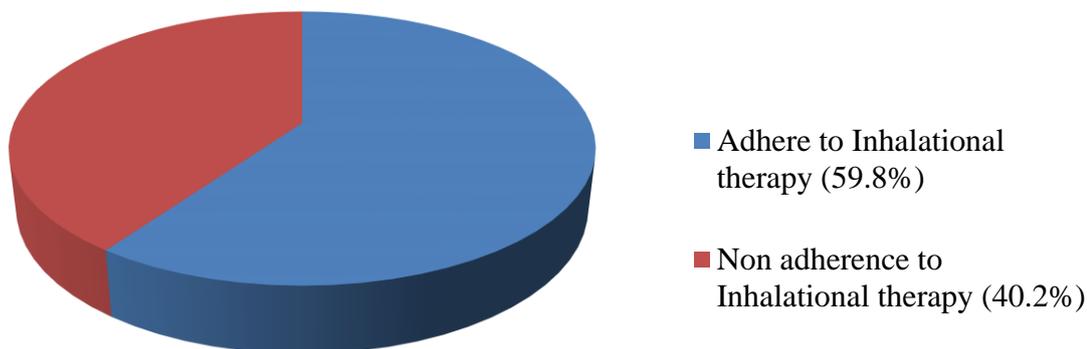
## OBSERVATION

Total patients = 102

Adhere to Inhalational therapy : Total 61 ( 59.80 % )

Non adherence to Inhalational therapy : Total 41 ( 40.20 % )

**Figure.1 Adherence of patients of OAD to inhalational devices**



**Assessed Questionnaire about possible reasons for their adherence to inhalational devices.**

	No. of Pts.	% of Pts.
1. I continue because, doctor advised me not to discontinue this medication.	41	67.21%
2. I continue because, I afraid of breathlessness attack after discontinuation of these devices.	39	63.93
3. I continue because, This medication helps me very much since when I am using this medication, I don't have any attack of breathlessness (or there is reduction in frequency of attacks of breathlessness ).	47	77.04%
4. I continue because, I feel secured after taking this medication.	48	78.68%
5. I continue because, I understood the importance of taking regular treatment for chronic disease.	48	78.68%
6. I continue because, I do not want my disease to worse.	36	59.01%
7. I continue because, I am afraid that my family / doctor will scold me	0	0%
8. I continue because, I have seen objective change in my lung function due to regular intake of medication .	11	18.03%
9. I continue because, I work in an environment which causes breathlessness but I can't change my job.	4	6.55%
10. I continue because, I can enjoy the food / duos etc. if I take regular preventer treatment.	3	4.91%
11. If any other reason for continuation of inhalational devices, specify that _____		

**Table 1 Common motives responsible for the adherence**

Sr. No.	Motives / reasons for adherence inhalational therapy	No. of patients adhered	Percentage of patients adhered
1	Patient understood the importance of taking regular treatment for chronic disease.	48	78.68%
2	He/she feel secured after taking this medication.	48	78.68%
3	This medication helps him very much since when he is using this medication, there is reduction in frequency of attacks of breathlessness.	47	77.04%
4	Doctor advised him not to discontinue this medication.	41	67.21%
5	He afraids of breathlessness attack after discontinuation of these devices.	39	63.93%
6	He does not want disease to be get worsen.	36	59.01%

**Assessed Questionnaire about possible reasons for their non-adherence to inhalational devices.**

	No. of Pts.	% of Pts.
1) I stopped because my medication does not help me very much.	10	24.41
2) I stopped because I get embarrassed using my medication in public.	6	14.63
3) I stopped because I afraid about side effects	1	2.43%
4) I stopped because I have unpleasant side effects from my medication if there then specify recurrent mouth ulcer.	1	2.43%
5) I stopped because the inhalational technique is difficult.	1	2.43%
6) I don't think that I have severe problem of breathlessness, So I feel that I do not really require regular medication	32	78.04
7) I frequently forget to take inhalation.	2	4.87%
8) I stopped because I think natural herbal remedies are safer than these medicines.	4	9.75%
9) I stopped because I like to take oral medication than inhalational medication.	4	9.75%
10) I stopped because I doubt the necessity of taking a daily medication for a condition that they experience episodically.	20	48.78
11) I stopped because I afraid of getting dependent on inhalation medicine.	30	73.17
12) I stopped because The medication is too expensive.	25	60.97
13) I stopped because It is not available easily in my village.	2	4.87%
14) If any other reason for discontinuation , specify that		

**Table 2: Common reasons for non-adherence**

Sr. No.	Common reasons for non-adherence:	No. of patients did not adhere	Percentage of patients did not adhere.
1	He don't think that he has severe problem of breathlessness, so he feel that he do not really require regular medication	32	78.04%
2	He afraids of getting dependent on inhalation medicine.	30	73.17%
3	The medication is too expensive	25	60.97%
4	He doubt the necessity of taking a daily medication for a condition that they experience episodically	20	48.78%
5	Medication does not help him very much.	10	24.41%
6	He gets embarrassed using his medication in public.	6	14.63%

**Z test score = 4.031**

This is statistically significant value for adherence hence inhalational therapy is inducing better health care in patients than non-adherence and patients feel inhalational therapy is more secure way of therapy.

**DISCUSSION**

OAD includes commonly asthma, COPD and bronchiectasis. These diseases are associated with significant morbidity. Inhalational therapy is mainstay of treatment in these diseases. As it has been seen in our study that 59.80% patients were adherent to inhalational devices this is statistically significant number but percentage of patients those who were non adherent to inhalational devices is not small. As poor adherence to a inhalational medication regimen and inhalation technique are closely related to inadequate disease control, poor health outcomes, increasing utilization of health services and economic loss due to ineffective treatment and abstinence from work.

As we observed from above study knowledge about their own illness and understanding of importance of taking regular medication for that play important in adherence to inhalational devices. Feeling of secureness is the second most common cause for taking this medication. Because of proper teaching of

inhalational techniques to patients there is proper drug delivery to lung results in reduction in frequency of attacks of breathlessness. This reduction in experiencing number of attacks of breathlessness is third most common cause in continuation of inhalational devices. Some patients forget some steps in technique of taking inhalational medication so proper drug delivery may not occur. Repeated teaching of proper technique for inhalational devices plays important role in getting relief from illness through proper drug delivery. So repeated advice by doctor about teaching techniques and about importance of continuation of medication is important in adherence to inhalational devices. Also feeling of afraid of breathlessness attack and fearing of disease to be got worsen after discontinuation of these devices is also important reason for adherence to inhalational devices.

Because of lack of knowledge, these patients do not understand importance of regular medication and also lack of severity about their illness are most common reasons for poor compliance to their inhalational devices. Fear of getting dependence on inhalational devices is the second important factor responsible for non-adherence. As economic status of patient also plays important role in usage of health care facilities and continuation of medication advised by doctors. Inhalational devices are expensive for patients of our country so poor patients discontinue use of inhalational devices. This was third most common cause of non adherence. Obstructive airway disease like asthma is having episodic nature. Patients suffering from asthma experience breathlessness intermittently or episodically so they don't feel necessity of taking a daily medication for a condition that they experience episodically. Proper technique is necessary for proper drug delivery consequently relieving dyspnea. Some patients especially older age and illiterates don't know proper inhalational technique so they are unable to take medication in correct way consequently not getting relief from symptoms so they feel that these medications are not helping them and tend to stop them. So proper techniques plays role in adherence of inhalational devices.

Limitation of this study is small sample size. So there is need to study with considering large sample size. Also as there are different inhalational devices are available in market and there are different techniques for different inhalational devices so there is need to study adherence to different inhalational devices.

#### CONCLUSION

There is significant number of OAD patients which are not adherent to inhalational therapy. There is need to improve adherence to inhalational devices through proper counseling. With considering above reasons for adherence and non- adherence patient should be counseled to improve adherence to inhalational devices.

#### REFERNCES

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