

# Knowledge, Attitude, and Practices of Pediatricians toward Oral Health of Asthma Patients

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## ABSTRACT

**Background:** Asthma is a multifactorial disease affecting the airways. Though it is a benign disorder, the treatment with medications such as bronchodilators, corticosteroids, and anticholinergic drugs may cause adverse effects on oral health.

**Materials and methods:** A questionnaire consisting of 16 closed-ended questions were mailed to pediatricians of Bijapur and Belgaum district. Of a total of 316, 96 duly filled questionnaires were collected.

**Results:** About 30 to 50% of the doctors were aware of the ill effects of medication and disease on the oral cavity. About 30% of the doctors advised preventive measures to their patients.

**Conclusion:** A multidisciplinary approach for treatment of the affected children is the key to improved health care delivery and better quality of life among these patients.

**Keywords:** Asthma, Oral health, Pediatrician.

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## INTRODUCTION

Asthma is a multifactorial disease affecting millions of people worldwide.<sup>1</sup> Though it is viewed as a fairly benign disorder, children with chronic medical disorders requiring long-term medications are at a risk of developing oral diseases.<sup>2</sup> Several studies have been done to investigate the effect of asthma on oral health. In spite of the confounding results, majority of the studies conclude that children with asthma have higher caries prevalence than their nonasthmatic counterparts.<sup>3-8</sup> Asthmatics are at a risk of developing periodontal disease, oral ulcers, oral candidiasis, dental erosion, and halitosis.

With increasing number of asthma-affected patients, health care workers need to be adept at recognizing the

signs and symptoms of asthma-associated oral health problems. This study is aimed at assessing the knowledge, attitude, and practices of the pediatricians toward oral health of asthma patients.

## AIMS AND OBJECTIVES

- To assess the awareness of pediatricians toward oral health among asthma patients.
- To know the precautions taken by pediatricians to prevent oral health hazards among asthma patients.

## MATERIALS AND METHODS

This cross-sectional survey was performed using a closed-ended questionnaire. The questionnaire consisted of 16 questions that addressed various issues related to asthma and oral health, namely, effect of drugs on gingiva, teeth, mucosa, etc. The questionnaires were distributed among pediatricians of Bijapur and Belgaum district. Totally 316 questionnaires were distributed. Pediatricians were sent a letter explaining the aims and objectives of the study, as well as questionnaire and a self-addressed envelope. A week after the questionnaire was mailed a reminder call was made to all the participants and enquired regarding the receipt of the questionnaire. Participants were requested to return the questionnaire at the earliest. Reminder calls were made twice at an interval of 1 week to mail the duly filled questionnaire in the self-addressed envelope to the investigator. The questionnaires thus collected were analyzed and subjected to statistical analysis.

## RESULTS

Out of 316 questionnaires, 112 were distributed in Bijapur district and the rest (n = 204) in Belgaum district. As many as 28 and 68 duly filled questionnaires were collected from Bijapur and Belgaum respectively. Nonresponse rate of 25 and 33.3% was seen in Bijapur and Belgaum respectively.

Among the participating doctors, 31% treated asthma patients everyday and 50% treated once a week and the rest once a month.

About 38% of the doctors believed that an asthmatic child suffered from dental caries more often than a normal child, while 31% believed otherwise. As much

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**Table 1:** Response of pediatricians toward the questionnaire

	Yes	No	Do not know
Asthma child suffers more commonly from dental caries	38%	31%	31%
Gingivitis is more common in asthmatics	12.5%	50%	37.5%
Spacer used during inhalation reduces ill effects of the drug on oral cavity	63%	18.5%	18.5%
Asthmatic child suffers more commonly from orofacial abnormalities than the normal child	38%	30%	32%
Medications used to treat asthma may cause candidiasis	44%	31%	25%
Calculus deposits are higher among asthmatics than normal children	38%	12%	50%

as 31% remained unaware of it. Among doctors who felt caries is more common in asthmatics, 18% believed it was because of change in oral flora, reduced oral pH, and 56% remained unaware of it (Table 1).

About 68.5% of doctors prescribed inhaler as medication, 6% prescribed tablets, and 25% prescribed both of these including sugar-based syrups.

Half the pediatricians (50%) did not agree that gingivitis is more common in asthmatic child, while 12.5% agreed with it and 37.5% remained unaware of it. Of the doctors who believed it was more common in an asthmatic child, half the doctors believed it was because of mouth breathing and altered immune response and the rest remained unaware of the cause.

A total of 63% of the doctors were of the opinion that spacer reduces the ill effects of medication on oral cavity, while 18.5% did not agree with it and 18.5% of them remained unaware of it; 90% of the doctors recommended spacer for their patients while using a spray; 38% of the doctors believed that asthmatic child suffers orofacial abnormalities more commonly than normal child and 30% disagree with it, while 32% were unaware of it; 44% of doctors believed that medications used to treat asthma may cause oral candidiasis, 31% did not agree, while the rest were unaware of this; 38% of the doctors believed that calculus deposits are higher in asthmatic children, while 12% believed otherwise. The rest (50%) were unaware of it; 41% of the doctors feel it is necessary to instruct the patients to rinse with water after medication, while the rest do not believe it. About 63% of doctors always recommend rinsing with water after medication and 38% recommend sometimes; 13% of doctors advice use of fluoride always, 69% advice sometimes, and 43.7% never advice. As much as 25% of doctors recommend their patients to visit dentist at regular intervals, 31% advised sometimes, while 44% never recommend dentist visit.

## DISCUSSION

The present study was conducted to assess the knowledge, attitude, and practices of pediatricians toward oral health status of asthmatic children.

Several studies have suggested that people with asthma have a greater rate of caries development than do their nonasthmatic counterparts.<sup>4-12</sup> The effect of reduced salivary flow has been elucidated in both human and animal studies.<sup>4,6,8,9</sup> As reduced salivary flow is accompanied by concomitant increases in Lactobacilli and *Streptococcus mutans*<sup>13</sup> in the oral cavity, it may contribute to increase in dental caries.

It was observed that while 30 to 50% of the doctors are aware of the ill effects of disease/medications, some of them are not adequately informed. The ill effects are due to side effect of drugs as well as the altered immune response. Hence, this calls for multidisciplinary approach for treatment of affected children.

It is strongly believed that drugs are a potential factor for caries development. Reduced salivary flow in return causes an increased count of Lactobacilli, *S. mutans*,<sup>13</sup> whose role in caries initiation and progression is well documented. This effect is further augmented by medications containing fermentable carbohydrates and sugars.

Only 10 to 20% of the drug reaches the lungs, while the rest remains in the oropharynx. This remaining drug may result in throat irritation, dysphonia, and oropharyngeal candidiasis. This ill effect can be reduced by using a spacer and rinsing mouth with water after medication.

Inhaled corticosteroids are implied in causing gingivitis. Result of increased phosphorus and calcium in submaxillary and parotid saliva may also cause increase in gingivitis.

Dentofacial abnormalities in asthmatics have been assessed, evaluated, and discussed. This has been attributed to impaired nasorespiratory function and increased frequency of mouth breathing in asthmatics. Commonly found abnormalities are increased upper anterior and total anterior facial height, higher palatal vaults, greater overjets, and prevalence of posterior crossbite.

In a study conducted among pediatricians of Bangalore to assess their perceptions toward dental caries and sugar syrups, it was observed that 34.7% of them said that sugar-based syrups cause dental caries. In our study too, similar results were seen.<sup>14</sup>

## CONCLUSION

- About half of the pediatricians participating in the study were well aware of the consequences of asthma on oral health.

- Among these, about half of them practiced preventive measure and advised their patients a dental visit or oral hygiene instructions.
- Many of the doctors were not well informed about the ill effects of the asthma on oromaxillary complex, such as orofacial abnormalities, increased calculus deposits, and gingivitis.
- A multidisciplinary approach for treatment of the affected children is the key to improved health care delivery and better quality of life among these patients.

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