

## ORIGINAL ARTICLE

# Etiology and Clinical Profile of Chronic Cough in Children

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### Abstract

**Background:** Cough in children is one of the most common presenting symptoms to pediatricians. Acute cough lasts less than 3 weeks, subacute 3-8 weeks and chronic cough more than 8 weeks.

**Objectives:** To find out the etiology and clinical profile of chronic cough in pediatric age group.

**Methods:** This descriptive type of cross-sectional study was carried out in the Department of Respiratory Medicine at Dhaka Shishu Hospital, Dhaka, Bangladesh from September 2017 to August 2018 for a period of one year. Purposive sampling technique was used to select the patients. Patients with the age 6 month to 12 years who were suffering from chronic cough for more than 8 weeks were included as study population.

**Results:** Family history of asthma was found in 36(72.0%) cases. Common clinical factors like allergic rhinitis, eczema, allergic conjunctivitis, trigger agent were found in 28(56.0%), 9(18.0%), 2(4.0%) and 50(100.0%) cases respectively.

**Conclusion:** Family history of asthma was found in majority cases of chronic cough. Allergic rhinitis, eczema, allergic conjunctivitis and trigger agent were common clinical factors associated with chronic cough patients.

**Key words:** Chronic cough, clinical profile.

### Introduction

Cough is a common problem in children. Acute cough lasts less than 3 weeks, subacute 3-8 weeks and chronic cough more than 8 weeks. Acute cough is usually caused by common viral upper respiratory tract infection.<sup>1</sup> A cough in children is one of the most common presenting symptoms to pediatricians. It can be very distressing for children and parents as it interferes with sleep, ability to play and school performance.<sup>2</sup> During childhood, the respiratory

tract and nervous system undergo a series of anatomical and physiological maturation processes, which make the cough center in children more sensitive to some stimuli from the environment.<sup>3</sup> Chronic cough is a common reason for parents to seek specialist evaluation for their children. In children, chronic cough is associated with impaired quality of life,<sup>4</sup> multiple physician visits,<sup>5</sup> and adverse effects from inappropriate use of medications.<sup>6</sup>

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## Materials and Methods

This descriptive type of cross-sectional study was carried out in the Department of Respiratory Medicine at Dhaka Shishu Hospital, Dhaka, Bangladesh from September 2017 to August 2018 for a period of one year. Purposive sampling technique was used to select the patients with the age 6 month to 12 years who were suffering from chronic cough for more than 8 weeks. Patients having other causes of chronic cough like post nasal drip, gastro-esophageal reflux disease, ILD, heart diseases were excluded from this study. In the first phase a standard questionnaire was designed with a view to collect data. Informed written consent was taken from each patient's guardian or attended. Initial evaluation of the patient by history and clinical examination was performed and recorded in the preformed data sheet. The procedure was performed in the respiratory out-door clinic of DSH. Statistical analyses were carried out by using the Statistical Package for Social Sciences version 23.0 for Windows (SPSS Inc., Chicago, Illinois, USA). Continuous variables were expressed as mean, standard deviation, and categorical variables as frequencies and percentages.

## Results

Table I shows that majority (40.0%) patients belonged to age 5-10 years. The mean age was found  $7.4 \pm 2.6$  years with range from 0.5 to 12.0 years.

<b>Table I</b> <i>Age distribution in the study patients (n=50)</i>		
Age (years)	Number of patients	Percentage
≤5	21	42.0
5-10	20	40.0
>10	09	18.0
Mean±SD	7.4 ±2.6	
Range (min-max)	0.5 -12.0	

Table II shows that more than two third (68.0%) patients were male and 16(32.0%) patients were female. Male female ratio was 2.1:1.

<b>Table II</b> <i>Sex distribution in the study patients (n=50)</i>		
Sex	Number of patients	Percentage
Male	34	68.0
Female	16	32.0

Table III shows that 36(72.0%) patients had family history of asthma.

<b>Table III</b> <i>Family history of asthma in the study patients (n=50)</i>		
Family history of asthma	Number of patients	Percentage
Yes	36	72.0
No	14	28.0

Table IV shows that 28(56.0%) patients had allergic rhinitis.

<b>Table IV</b> <i>Allergic rhinitis in the study patients (n=50)</i>		
Allergic rhinitis	Number of patients	Percentage
Present	28	56.0
Absent	22	44.0

Table V shows that 9(18.0%) patients had eczema.

<b>Table V</b> <i>Eczema in the study patients (n=50)</i>		
Eczema	Number of patients	Percentage
Yes	9	18.0
No	41	82.0

Table VI shows that 2(4.0%) patients had allergic conjunctivitis.

<b>Table VI</b> <i>Allergic conjunctivitis in the study patients (n=50)</i>		
Allergic conjunctivitis	Number of patients	Percentage
Present	2	4.0
Absent	48	96.0

Table VII shows that 50(100.0%) patients had trigger agent.

**Table VII**  
*Trigger agent in the study patients (n=50)*

Trigger agent	Number of patients	Percentage
Present	50	100.0
Absent	0	0.0

### Discussion

In this study it was observed that majority (40.0%) patients belonged to age 5-10 years. The mean age was found  $7.4 \pm 2.6$  years with range from 0.5 to 12.0 years. Similar observation was found by who Yoo et al<sup>7</sup> showed the mean age was  $11.4 \pm 2.2$  years. Agertoft et al<sup>8</sup> found mean age 9.2 years. Marguet et al<sup>9</sup> observed median age 85 months.

In this present study it was observed that more than two third (68.0%) patients were male and 16(32.0%) patients were female. Male female ratio was 2.1:1. Hossain et al<sup>10</sup> showed among 50 patients 29 (58.0%) were male and 21(42.0%) patients were female. Male to female ratio were found 1.4:1. Harish et al<sup>11</sup> have showed 71.7% male and 28.3% female. Al-Moamary et al<sup>12</sup> and Yoo et al<sup>7</sup> have also observed male predominant in their studies, where they have found that 53.8% and 53.7% are male respectively. Marguet et al<sup>9</sup> reported 78.6% patients were male and 21.4% were female.

In this study it was observed that 36(72.0%) patients had family history of asthma. Hossain et al<sup>10</sup> reported similar observation, they showed 39(78.0%) patients had family history of asthma. Bandyopadhyay et al<sup>13</sup> and Khakzad et al<sup>14</sup> showed that family history of Asthma were present in 47.5% and 43.0% respectively which is comparable with the current study.

In this series it was observed that 28(56.0%) patients had allergic rhinitis. Hossain et al<sup>10</sup> showed 29(58.0%) patients had associated allergic rhinitis and the rest 21(42.0%) had no history of allergic rhinitis. Alvarez et al<sup>15</sup> have airway eosinophilic infiltration in rhinitic patients. Marguet et al<sup>9</sup> showed 36.0% patients had H/O allergic rhinitis.

In this present study it was observed that 9(18.0%) patients had eczema. Hossain et al<sup>10</sup> observed that

8(16.0%) patients had associated eczema and the rest 42(84.0%) patients has no history of associated eczema.

In this study it was observed that 2(4.0%) patients had allergic conjunctivitis. Hossain et al<sup>10</sup> also supported our study, they observed that only 2(4.0%) patients had associate allergic conjunctivitis and the rest 48(96.0%) patients had absence of associated conjunctivitis.

In this current study it was observed that 50(100.0%) patients had trigger agent. Hossain et al<sup>10</sup> also found similar observation, they showed all (100.0%) patients had the presence of trigger factors.

### Conclusion

Family history of asthma was found in majority cases of chronic cough. Allergic rhinitis, eczema, allergic conjunctivitis and trigger agent were common clinical factors associated with chronic cough patients.

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