Letter to the Editor

# Epidemiological Characteristics of Intussusception in Mumbai, India

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**Abstract**

***Background:*** To analyse data on pediatric patients admitted with primary idiopathic intussusception with special reference to seasonal occurrence if any and its genesis.

***Patients and Methods:*** Cases of idiopathic intussception admitted to Pediatric Surgery wards of the KEM Hospital, Mumbai during the period of June 1995 to May 1997 were studied retrospectively with special reference to timing of occurrence of intussusception during the year.

***Results:*** An analysis of data revealed that there has been a clustering of cases in the months of February to June in each of the three years. Increased incidence of intussusception in the pediatric population of Mumbai and areas around has been observed during this period in three consecutive years. This increase is significant when compared to the other months of the year.

***Conclusion:*** We postulate that during this period there has been a noticeable change of season with temperature fluctuations and accumulation of smog in the highly populated industrialized metropolis of Mumbai. This often results in occurrence of viral and bacterial gastrointestinal infections which could be the causative contributory factor for increase in the incidence of intussusception during these months.

***Key words:*** Primary idiopathic intussusception, epidemiology

## Introduction

Intussusception is a common cause of intestinal obstruction in the pediatric age group, specially in infants and toddlers[1]. An early diagnosis with proper management is life saving[1,2]. The present report deals with a study of cases of primary idiopathic intussusception with special emphasis on epidemiological characteristics.

## Methods

The retrospective study includes 28 cases of idiopathic intussusception admitted diagnosed and treated in the pediatric surgery units of the KEM Hospital and G.S. Medical College, Mumbai during the periods of June 1995 to May 1997. Data

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**Table 1:**
Shows the age and sex distribution of the patients

| Age in Years | No of Cases | Percentage |
|---|---|---|
| 0 to 1 year | Male - 9 | 32.13 |
| | Female - 7 | 25 |
| | Total - 16 | 57.13% |
| 1 to 2 years | Male - 6 | 21.42 |
| | Female - 3 | 10.71 |
| | Total - 9 | 32.13% |
| 2 to 3 years | Male - 2 | 7.14 |
| | Female - 0 | 0 |
| | Total - 2 | 7.14% |
| 3 to 4 years | Male - 0 | 0 |
| | Female - 0 | 0 |
| | Total - 0 | 0% |
| 4 to 12 years | Male - 0 | 0 |
| | Female - 1 | 3.57 |
| | Total - 1 | 3.57% |
| **Total** | **28** | **100%** |

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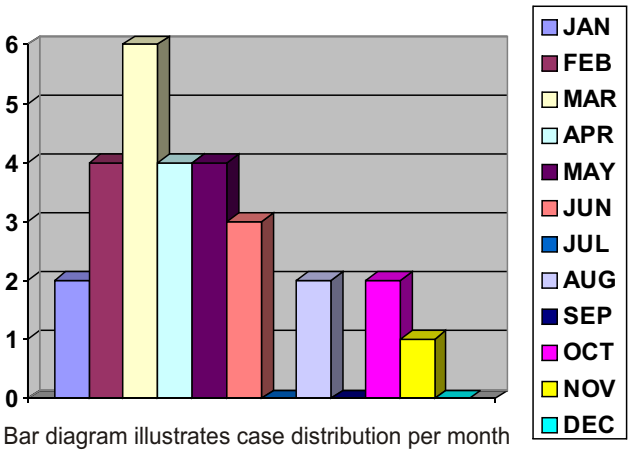
**Table 2:**
Shows serial distribution every month cumulated for three years.

| Year | Month | Serial Distribution | Percentage |
|---|---|---|---|
| 1995 to 1997 | January | 2 | 7.14 |
| | February | 4 | 14.28 |
| | March | 6 | 21.42 |
| | April | 4 | 14.28 |
| | May | 4 | 14.28 |
| | June | 3 | 10.71 |
| | July | 0 | 0 |
| | August | 2 | 7.14 |
| | September | 0 | 0 |
| | October | 2 | 7.14 |
| | November | 1 | 3.57 |
| | December | 0 | 0 |
| | **Total** | **28** | **100** |

collection was done from hospital records of admissions and operation theatre notes. Cases with a definitive identifiable cause for the intussusception were excluded.

In the present study 57.13% cases occurred below 1 year of age. 32.13% patients were between 1-2 years, 7.14% between 2- 3 years, 0% between 3-4 years, and 3.17% above the age of 4 years.

Of the total of 28 patients over the 3 year period, 6 presented in March, and 4 each in February, April and May accounting for 18 patients(64.12%) in these 4 months itself. 3 presented in June and 7 during the remaining months.



Bar diagram illustrates case distribution per month

## Discussion

Intussusception is the telescoping of one portion of the intestine into another. It can occur at any age. However, primary idiopathic intussusception is commonest in infants between 5 to 9 months. More than half of all cases occur within first year of life and only 10 to 25% cases occur after the age of 2 years[1]. Our present study has shown that 57.13% cases occurred below 1 year, 32.13% between 1-2 years, 7.14% between 2- 3 years, 0% between 3-4 years, and 3.17% above the age of 4 years.

An interesting phenomenon seemed to emerge from our study particularly from the epidemiological view point. It was seen that 18 of 28 cases (64.12%) occurred between the months of February to June i.e. from the beginning of summer up to beginning of monsoon season.

It is a documented fact that one has to be more suspicious of intussusception during the peaks of respiratory infection and epidemic gastro-enteritis[1,2]. Reports from Africa have suggested seasonal variation in incidence[3,4]

In a recent paper from the UK, Black[5] has documented increased incidence of cases during 1952 in London when there was the "great smog", where in it is postulated that infants swallowed the toxic chemicals during fog and that facilitated passage of viral pathogens through the ideal wall causing swelling of Peyer's patches resulting in intussusception.

This study which is based on data from Mumbai may reflect a similar situation. Our explanation for the above finding is as follows. Rapid industrialization in the city has led to increased amounts of smoke in the atmosphere. The month of February marks the change of season with cold season still persisting but increase in daytime

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temperature. Smoke and fog settle together resulting in Smog. February also marks appearance of viral respiratory and gastrointestinal infections compounded with bacterial infections increasing in April leading to summer diarrheas. It could be that the clustering of cases is a compound effect of all the three etiological agents smog, viral and bacterial infections leading to hypertrophy of Peyer's patches predisposing to intussusception. This study would support the earlier study by Black. Early diagnosis and treatment is the key to reducing morbidity and mortality in intus-susception[3,6].

Our findings may suggest that one should have an increased index of suspicion for this diagnosis especially in these particular months with seasonal changes and increased incidence of viral or bacterial gastrointestinal infections.

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