## WHIFF OF ASTHMA ALL ROUND THE YEAR


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The garden city of Bangalore, known for its salubrious climate has also earned the dubious distinction as the "birth place" of asthma for many a child. The incidence of bronchial asthma is particularly high in Bangalore.

Instances have been cited where people, who have never exhibited tendencies earlier, have on coming to Bangalore, had attacks of asthma. Further, those who have had only mild attacks elsewhere experienced severe ones here. It has been recorded that the percentage of asthmatics who reported relief when they left Bangalore is as high as 37.6.

A survey by a group of medical practitioners undertaken in 1972-73 confirmed these findings. According to this, over 50 per cent of the asthma patients complained of increased severity of attacks while in Bangalore.

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While there was no clear relationship with age or sex, it did appear that asthma was more common among men than women. Men between 50 and 55 years of age appeared to suffer more.

Asthma is a complex subject and several causes, both endogenous and exogenous, are known to contribute to its incidence. A systematic investigation of the pollen and fungal spore content of the environment in Bangalore was undertaken as a first measure (July 1976 to July 1978). It was organised under the auspices of the Asthma Research Society, a registered body, whose headquarters were provisionally located in the Indian Institute of Science. The society with Prof. B.R. Seshachar as president, consists of Dr. V. Parameshvara (secretary), and among others, Dr. M. Sirsi and Dr. B.V. Ramaswami as members.

With the initial support provided by the Indian Institute of Science and with financial assistance by founder-members and well-wishers, apparatus for collecting pollen and spores was fabricated and located in six sites in the city. Daily collection of samples was made and transported to the Institute for analysis.

The Karnataka State Council for Science and Technology gave financial aid to the society for the next two years. Simultaneously, a door-to-door community survey of asthmatics was undertaken in different areas of the city with the cooperation of NSS officers and students of Bangalore University.

Environmental studies conducted in several countries have indicated that pollen and fungal spores are responsible for asthma. A systematic investigation of the pollen and fungal spore content of the atmosphere in Bangalore was undertaken for the first time from July 1976 to July 1978, by the Asthma Research Society.

Atmospheric pollen and fungal spores were collected over the roofs of buildings at the Government Science College, Indian Institute of Science, Cantonment, Rajajinagar, Indirangar and Basavangudi, during 1976-77 and in Jayanagar, Indian Institute of Science, Good Shepherd convent, Vijayanagar and Chamarajpet the next year. The study resulted in identification of as many as 75 types of air-borne pollen and 120 types of spore.

The pollen calendar for 1976-78 from ten different places shows that pollen grains were present all the year around in the Bangalore atmosphere. All the identified pollen types could be attributed to local plants.

The 1976-77 study indicated that the maximum quantity of air-borne, pollen comes from weeds, followed by trees and grass pollen. The highest amount of grass pollen was collected in September and October, while pollen of trees and weeds were found throughout the year in irregular quantities.

The number and per centage of pollen types caught in two successive years in the same place (Indian Institute in Science library building) were different. The study revealed that the percentage of grass, parthenium and cassia were higher in 1977-78 than in the previous year. However, the total pollen count was more in 1976-77 (9,555 as against 5.907 in 1977-78).

According to the study, the pollen of parthenium was the highest in quantity (41 per cent), followed by the grass pollen (28.8), which is consistently observed in all the units, Cassia species (11.8) take the next place.

The weed pollen are more in the months of June and July. A large number of weed species are known to bloom in these months in Bangalore. There fore, the weed pollen in the city comes mainly from weed species growing in and around Bangalore. The trees take the next place. There are two seasons for the trees to bloom, *i.e.,* April to June and October to December. The grasses grow throughout the year. The highest amount of pollen from all the categories has been collected in July and the lowest in January.

The data on the temperature, rainfall, wind speed and relative humidity from August 1977 to July 1978 have also been collected. There is relatively heavy atmosphere pollen between May and July. The weeds and trees, which contribute a high degree of pollen to atmosphere, start growing fom April until the end of July.

There is a sudden rise in the speed of wind from April to July distributing the pollen into the atmosphere more efficiently. The high number of pollen grains caught during May to July is corroborated by turbulent winds during

those months, The higher the per centage of relative humidity, the more is the pollen collected.

With regard to fungal spores, during August to December the rainfall is heavy and the spore content is low. The number of fungal spores consistently increase from January to July.

A survey of the incidence of asthma cases has been carried out in 14 different parts of the city—Basavangudi, Majestic and surrounding areas, Gandhinagar. Rajajinagar ahd Malleswaram (from July 1976 to July 77) and Vijayanagar, Richmond and Austin Town, Cox Town, Thyagarajanagar, Chamarajapet, Jayanagar, Vasanthanagar, Wilson Garden and Yeshwantpur (from August 1977 to August 1978) — to find out whether pollen and fungal spores are really responsible in aggravating the disease. NSS students of a dozen colleges in the city assisted the Asthma Research Society in the survey work.

In the two-year period, nearly 1.50 lakh person, covering 27,000 households, were surveyed, leading to the identification of 1,940 asthmatics (1044 men and 896 women). The incidence of asthma was 1.31 per cent which tallies national average.

An interesting point revealed by the survey was that about 37.6 per cent of asthmatics get relief when they go out of Bangalore.

The survey has brought to light several interesting points. Among asthmatics, the residental locality of Chamarajpet accounts for the maximum percentage of 2.7, followed by Vasanthanagar (2.05) and Indiranagar (1.92). The ever busy Majestic and surrounding areas (0.99) occupy the bottom place. There is slightly higher proportion among males (1.165:1).

Housewives (37.01 per cent) and officer workers (40.31) are more susceptible to asthma attack than industrial workers (7.11) and retired persons (11.29). This suggests that industrial pollutants can be almost ruled out as casual factors for asthma and that attention should be focussed on dust-mites, pollen and spores.

About the relationship between age and asthma, it appears that about 20 years or so, asthma does not seem to favour any particular age group significantly.

Cold as well as wet weather contributes to asthma attack. According to the survey the greatest percentage of attack (40) takes place during winter, followed by the rainy season (21). Although asthma is not a contagious disease, 32.27 per cent of hereditary cases came to light during the survey.

As regards the relationship between asthma attack and the time of the day, it is interesting to note that by far the greatest percentage is in the 'night' (31.5) followed by continuos' (21), clearly indicating that the colder times of the day are favourable to attacks.

It is rather surprising that asthmatics get relief when they move out of the city in view of the fact that the percentage of asthmatics in Bangalore is not higher than the national average. "Even in the two factors that have been analysed during the past two years (pollen and fungal spores) conclusions cannot be made because clinico-immunological studies have not been done on the asthmatics."

This work is only half complete. As a follow-up action, Dr. Parameshvara says asthma and allergy clinics must be established in the city both by the city Corporation, and the State Government. These clinics should provide the following facilities:

To register all cases of bronchial asthma and allergic disorders; facilities for thorough medical examination and investigations; facilities for respiratory functional studies and biochemical and hematological investigations; facilities for making extracts of the suspected pollen, spores, fungus, house dust, including mite and cockroaches; facilities for subjecting the asthmatic patients for "patch test". Facilities for desensitizing the patients by the respective antigens; to apply yoga and allied therapy to asthmatics; research on indigenous drugs in the treatment of bronchial asthma; research programme in bronchial asthma; and provision for follow-up of patients.

There is urgent need to take up educative programme though publication of bulletins, brochures and establishing a museum. While the local bodies and the government must consider the expenditure on health programmes as an investment, dedicated people should come forward to assist the Government in these programmes, Dr.V. Parameshvara says.