SUMMARY

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Aerobiology has gained prime importance, because of its applications in the diagnosis and treatment of allergic disorders. As pollen and fungal spores have long been known as environmental bioallergens responsible for allergic manifestation in sensitive human beings. Proper diagnosis and treatment of such allergic disorders requires the knowledge of airspora. The researches and survey reveal that, public hospital, indoor biopollutants have not been extensively studied. The indoor airspora of hospital will throw light to some extent on the problem. Keeping this view in mind, the present topic has been selected to study the correlation between indoor concentration and patients visited throughout year. Aerobiological survey of the "Krantisinha Nana Patil, General Hospital, Satara" was selected and the work was carried out from October 2006 to September 2007.

The studies of the hospital airspora were carried out with spot sampling method. For this Tilak rotorod sampler and Gravity petridish methods, were adopted. Samples were collected, twice, in a week with the help of Tilak rotorod sampler. The sampler was operated for one hour in general wards of civil hospital. To correlate the fungal aerospora, petriplates containing PDA as culture medium were also exposed for 15 to 20 min. twice in a week, at various places of indoor and outdoor of the hospital.

During this survey of airborne microbes, as many as 51 different types of fungal components and bacteria were estimated. Out of these, one belongs to class-Actinomycetes, 2 forms to class- Mastigomycotina and class-Zygomycotina each, 5 forms of class-Ascomycotina and 41 different forms from class-Deuteromycotina.

A] The general airspora of Civil Hospital, Satara-

1) Genera with highest spore concentration-

   Cladosporium (44.37%), *Aspergillus* (29.39%)..

2) Genera with maximum spore concentration-

   Phialophora (3.53%), *Penicillium* (3.43%), *Alternaria* (2.75%) and *Rhizopus* (2.04%).

3) Those occurring in least percentage throughout year-

   Allescheriella (0.01%), *Pseudotorula* (0.01%), *Catenophora* (0.02%) and *Custingophora* (0.02%).

B] Concentration of different groups of fungi-

1) Class-Mastigomycotina- 0.17%

Maximum % in – November

Minimum % in - August.

2) Class-Zygomycotina- 2.65%

Maximum % in -September

Minimum % in - June, October

3) Class-Ascomycotina- 0.31%

Maximum % in - July

Minimum % in -June, September, October and December

4)Class-Deuteromycotina- 96.21%

Maximum % in- May

Minimum % in- April

5) Class-Actinomycetes- 0.17%

Maximum % in- April

Minimum % in –June

C] Seasonal variations-

The seasonal concentration of airspora is as follows-

1) Genera occurring in highest spore concentration throughout the year-

Cladosporium (44.37%), *Aspergillus* (29.39%).

a) Rainy season-

Maximum % in- September

Minimum % in – April

b) Winter season-

Maximum % in- November

Minimum % in – January

c) Summer season-

Maximum % in- May

Minimum % in – April

2) Genera occurring in maximum spore concentration-

Phialophora (3.53%), *Penicillium* (3.43%), *Alternaria* (2.75%) and *Rhizopus* (2.04%).

a) Monsoon season-

Maximum % in- September

Minimum % in – July to August

b) Winter season-

Maximum % in- December

Minimum % in – January

c) Summer season-

Maximum % in- May

Minimum % in – April

D] Genera with maximum number of species recorded-

1) *Aspergillus*- 10 species

2) *Alternaria*- 4 species

3) Cladosporium- 3 species

E] Bacteria (74.08%) of the total airspora-

a) Monsoon season-

Maximum % in- July

Minimum % in – September

b) Winter season-

Maximum % in- November

Minimum % in – January

c) Summer season-

Maximum % in- February

Minimum % in – May

F] Aeromycopollutants and allergy, skin diseases and asthma-

The airspora of Krantisinha Nana Patil, General Hospital, Satara indicated following fungal forms viz. *Actinomyces, Alternaria, Aspergillus, Blastomyces, Candida, Cladosporium, Curvularia, Drechsclera, Fusarium, Histoplasm, Humicola, Memnoniella, Microsporum, Mucor, Nigrospora, Oidiodendro, Penicillium, Periconia, Pithomyces, Rhizopus* and *Sporothrix* etc.are allergic to human beings.

To reduce concentration of aeromycopollutants indoor of hospital following suggestions are made-

1) The spore concentration is much lower in filtered air as compared to controlled environment, so arrangement should be made like wise.
2) There must be a facility to wash feet and hands before entering the hospital.
3) Proper ventilation should be maintained.

4) The dehumidification in the hospital should be scientifically managed i.e. wall proofing by dehumidification material, A/C facility etc.
5) The garden around the hospital should be properly managed for disease and insect pests.
6) Aerobiological survey of indoor hospital should be carried out at frequent interval in a year.