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Diversity of Upper Respiratory Tract Infection Causing Bacteria in Northern Rajasthan

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Animal and humans bear micro flora on their body surfaces and other parts exposed through various tracts to the external environment and show a great diversity. The availability of bacterial flora varies according to various environmental conditions. Present study carried out in Sriganganagar, Bikaner, Nokha and Hanumangarh, showing varying diversity of human sputum bacterial flora in various parameters. Highly male retained much bacterial diversity as compare to female. In samples, most common bacteria are *Staphylcoccus aureus*, *Corynebacterum* sp., *E. coli, Klebsiella pneumoniae, Streptococcus pyogens, Pseudomonas aeruginosa*, *Haemophillus influenzae, Proteus vulgaris, Mycobacterium* sp., *Enterobacter* sp., *Yarsinia* sp. and *Nesseria* sp.

Key words: URT Infection, Bacteria, Diversity.

The human respiratory system can be infected by various bacteria. Respiratory infection becomes established depend upon host microbe's relationship and the condition of the respiratory nonspecific defense system.

The "upper respiratory tract" consisting of nasal cavity, pharynx, larynx, trachea and bronchi and the tracheobronchial secretion are collectively referred to as sputum. Sputum is viscoelastic (95% water & only 5% solid) & constituted by plasma, water electrolytes and mucin. When it comes out, it is contaminated by nasal and salivary secretion and normal bacterioflora of oral cavity. (Sood, 1990).

The mucous membranes of upper respiratory infection that are exposed to air and food (nose, throat, mouth) normally display variety of aerobic and anaerobic bacterial species. (Sood, 1990 & Todar, 2002).

Usually the normal flora of the upper respiratory tract prevents entry and overgrowth of the membrane by transient microorganism, some of which might be pathogenic and capable of invading respiratory lining cells or dipper tissues (Josphine *et, al.1994*).

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MATERIAL AND METHODS

Sample collection is carried out in a sterilized capped sputum cup (Beck, 1982) from Govt. P.B.M. Hospital Bikaner, M.L. Bagari Hospital Nokha, Govt. Hospital Sriganganagar, Govt. Hospital Hanumangarh, some private diagnostic labs and individual healthy persons of that places (Table 1).

Isolation of bacteria completed with nutrient agar media, Mac Conkey agar, PSM Media and EMB Agar medium (Freemankar, 1980), cultures were maintained on general medium by various techniques like spread plate method, streak plate method etc. (Aneja, 2003 & Cappucinno 1992). Unknown bacteria isolated in the pure form were identified by a combination of information from primary and secondary identification. "Bergey's Manual of Determinative Bacteriology" served as a practical guide for the identification of bacteria.

DISCUSSION

Diversity of upper respiratory tract infectious organisms, varies according to age and sex, and also affected by environmental conditions. Where totally desert zone like Bikaner and Nokha only air born pathogen like *Staphylcoccus aureus, Pseudomonas aeruginosa*, *Klebsiella pneumoniae, Streptococcus pyogens, E.coli, Proteus vulgaris,* and in low humid zone Sriganganagar & Hanumangarh (Due to GANGNAHER) *Haemophillus influenzae, Mycobacterium sp.*, *Yarsinia sp*. and *Nesseria sp*., *Enterobacter sp*. *Streptococcus pyogens, Klebsiella pneumoniae* are predominantly found.

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