

BACTERIA CONTAMINATING SPUTUM IN COPD PATIENTSangeeta Mahale*¹, Kirti Jain², Bharti Jain³, Padmakar Tripathi⁴ and Nagmi Aliya⁵^{1,3}Sarojini Naidu Govt. College, Shivaji Nagar, Bhopal(M.P).²Benazir Govt. Science and Commerce College, Jahangirabad, Bhopal (M.P).⁴Pathology and Bacteriology Department, District TB Hospital, Idgha Hills Bhopal (M.P).⁵MRTB Hospital, Indore (M.P).Article Received on
09 Sept. 2016,Revised on 29 Sept. 2016,
Accepted on 19 Oct. 2016

DOI: 10.20959/wjpr201611-7270

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College, Shivaji Nagar,
Bhopal(M.P).**ABSTRACT**

Introduction: Chronic obstructive pulmonary disease (COPD) is the name for a collection of lung diseases including chronic bronchitis, emphysema and chronic obstructive airways disease. Typical symptoms of COPD include increasing breathlessness, persistent cough with phlegm and frequent chest infection. Buist *et al.*, (2007); Gershon *et al.*,(2011) It affected more than 5% of the population and is associated with high morbidity and mortality. CDC(2012), Chronic obstructive pulmonary disease (COPD) is a slowly progressive disease.⁵ In many developing countries both pulmonary tuberculosis

and COPD are common. Fairall *et al.*, (2005). Normal flora of the oropharynx usually contaminate the sputum sample. Overgrow large number of different species preventing the determination of the true pathogen. Nihan and Aysegul (2010) Commonly seen problem with the patients is that they are not well trained therefore most of the times it is watery saliva which they send instead of the purulent sputum to the laboratory, leading to erroneous result. Ravichandran *et al.*,(2001) Organisms most commonly associated with exacerbations are Haemophilus influenzae, Streptococcus pneumoniae, Moraxella catarrhalis, Mycobacterium tuberculosis and some gram-negative bacilli. Mandell *et al.*,(2003).

KEYWORDS: COPD, Morbidity, Mortality, Contamination.**OBJECTIVE**

- To determine the percentage of infection in COPD patients.
- To show which age group is more affected from bacterial infection.

MATERIALS AND METHODS

The present study was conducted in the Department of Tuberculosis & Respiratory Diseases, Kasturba Hospital BHEL Bhopal, M.P. during month of September 2014. Total 50 sputum samples were processed during the study period.

Those patients who are advised to do sputum for AFB sputum has taken for culture in our laboratory. Sputum samples (preferably two) were collected from all patients after rinsing the mouth twice with plain water. The smear was prepared and stained in ziehl - neelsen method. Then sputum was cultured on Nutrient agar media. When the growth appears then we isolate the microbes for further studies. Then we prepare the smear stain by Grams staining method. Culture isolates were identified according to standard techniques.

RESULT

TABLE I-Bacteria identification in percentage

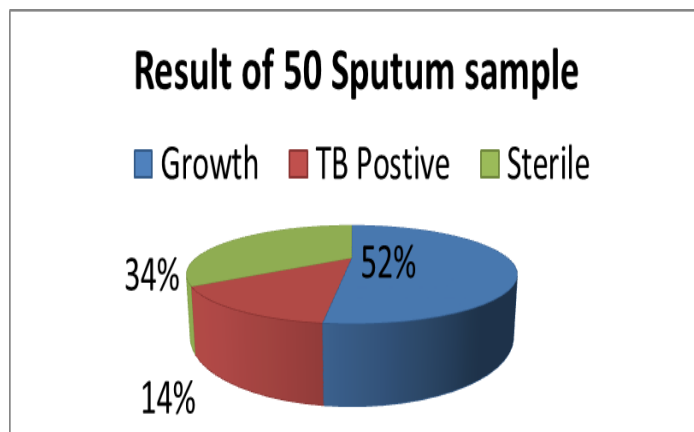
Organism	Number	Percentage %
Gram positive cocci	13	39.39
Gram negative cocci	8	24.24
Gram positive bacilli	7	21.21
Gram negative bacilli	3	9.09
contaminated	2	6.06
Total	33	66.0%

TABLE II-Age wise distribution of Sputum positive sample

S.NO	AGE GROUP	NO. OF PATIENT	POSITIVE PATIENT
1	11-20	7	5
2	21-30	15	10
3	31-40	11	8
4	41-50	4	2
5	51-60	1	1
6	61-70	6	4
7	71-80	6	3

TABLE III- Show Growth and sterility of bacteria

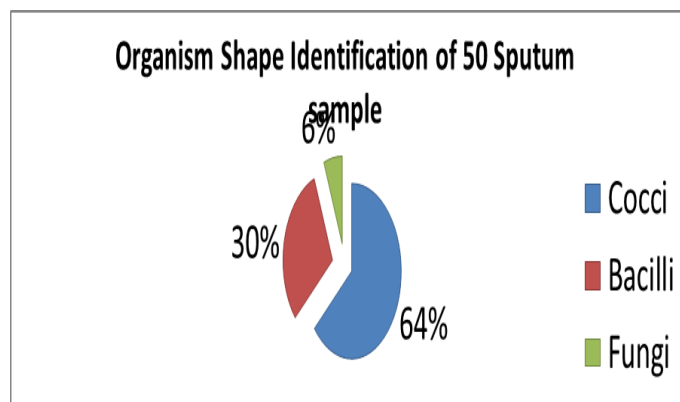
TOTAL PATIENT	GROWTH	STERILE	TUBERCULOSIS POSITIVE
50	26	17	7



GRAPH-I

TABLE IV- Distribution of bacteria and fungi

TOTAL GROWTH	ORGANISM		
	COCCI	BACILLI	FUNGI
33	21	10	2



GRAPH II

DISCUSSION

Out of 50 sputum samples processed during one month period, culture was 66% (33/50). Culture positivity reported in other studies include- Daniel Musher *et al.*, 79%, Jean J Lloveras, 57%, V.P Amudha *et al.*, 81% our result similar for this study. Nihan Ziyade *et al.*, 44.7%, Nawfal Ali Mubarak- 41.7%, Aroma Oberoi *et al.*- 32% and Somporn *et al.*- 40.95% result different for this study.

Gram Negative Bacilli (GNB) were isolated in threecases (9.09%) in the present study and Gram Positive Cocci (GPC) is thirteen (39.39%) cases. Where Somporn *et al.*, had reported GNB in 76% of their isolates. Another study of Feldman showed higher proportion of gram-

negative bacteria as against gram-positive bacteria. Immanuel Amissah found gram positive in 40% cases and gram negative in 58% cases. Our result is totally different for this studies.

Our study report more sputum positive in young age group 21-40. The study of Immanuel Amissah showed sputum positive in 30-49 age group.

CONCLUSION

The study shows that more male patient (72%) come to the lab. 6% of the sputum samples have fungal contamination. 12% of Follow up TB patient's sample have bacterial contamination. The infection of cocci is more than of bacilli. the study thus shows that Gram Positive bacteria spread more infection as compare to Gram Negative.

Male were more susceptible to microbial infection than females. It further reveals that the incidence of infection was age-dependent, with more youth (21-40) being infected through. The practitioner has to provide clinical information to the patient hat will allow them to give best care.

ACKNOWLEDGMENT

Authors are thankful to Dr. Manoj Verma District TB Officer, Bhopal, MP and Dr. G P Saxena Secretary M.P state T.B. Association Dr. Alpana Tiwari Head of chest department kasturba hospital BHEL, Bhopal MP

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