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BI-DIRECTIONAL INCIDENCE OF COVID 19 AND TB

Dr. Allampati Bala Sree Sowmya

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I. INTRODUCTION:

SARS-CoV2 also called as COVID 19 is declared as pandemic on March 11 2020. Over 90 million confirmed cases are reported worldwide and over 10 million cases in India. Whereas TB is of high burden in India with approximately 2 million cases in 2019. India is one of the 3 countries bearing the largest share of global burden of tb according to WHO Global TB report 2020. COVID 19 and TB present with almost similar symptoms like cough, fever, breathlessness, weakness with varying severity but with chronicity of symptoms for TB and acute or rapid progression in COVID 19. Both have similar mode of spread i.e., via droplet nuclei. People with co-infection may exhibit unfavourable outcomes and have risk of transmission of infection in community. There is high chance of missing the co-infection, so bidirectional testing is necessary to reduce morbidity and mortality.

AIMS: 1) To know the incidence of PTB in COVID 19 positive cases
2) To know the incidence of COVID 19 in patients diagnosed with TB
3) To know the age and sex distribution of COVID 19 and TB co-infection

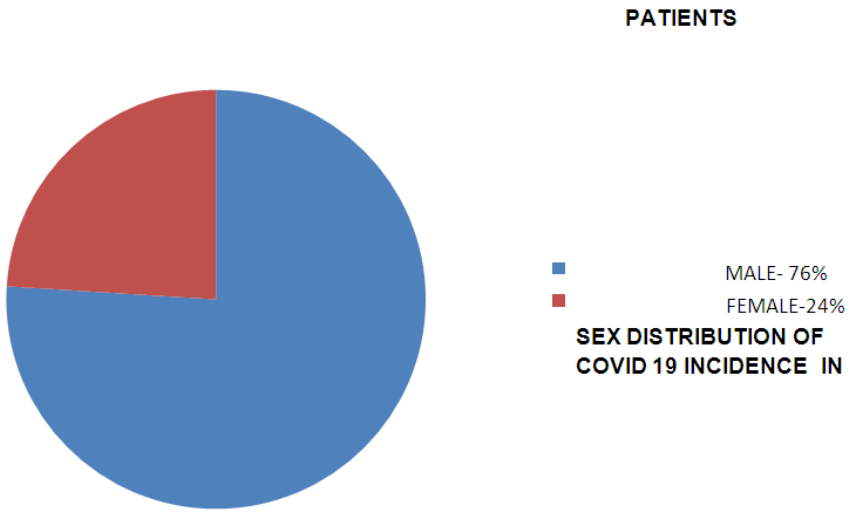
II. METHODOLOGY:

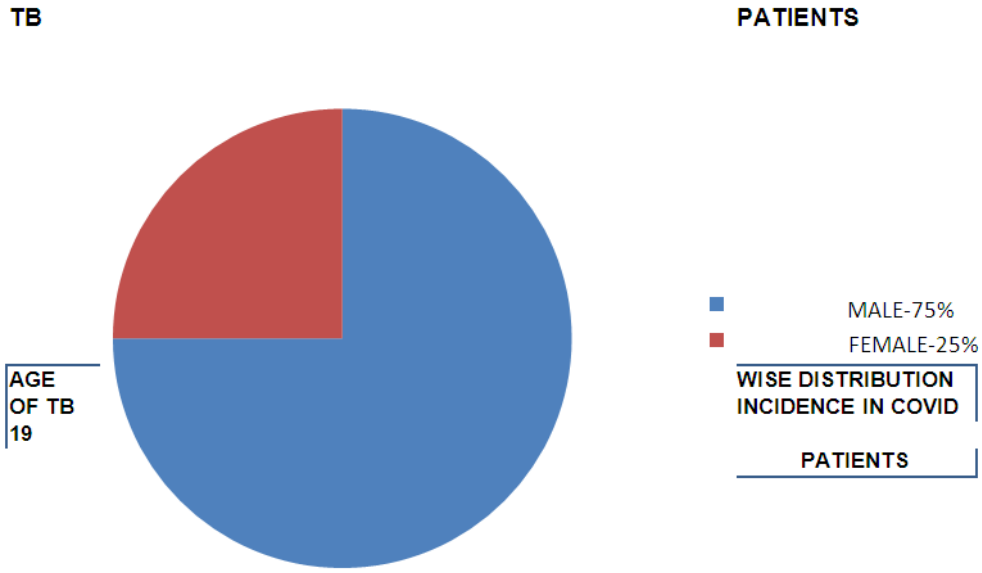
2004 COVID 19 positive patients (diagnosed by nasopharyngeal swab for RTPCR /TRUNAAT/RAT) between 9th September 2020 to 31st October 2020 in Kurnool District, Andhra Pradesh, were subjected for sputum CBNAAT/TRUNAAT for Mycobacterium tuberculosis. Similarly 1250 PTB and EPTB cases who were on followup and treatment were tested for COVID 19 by nasopharyngeal swab RTPCR/TRUNAAT/RAT.

III. RESULTS:

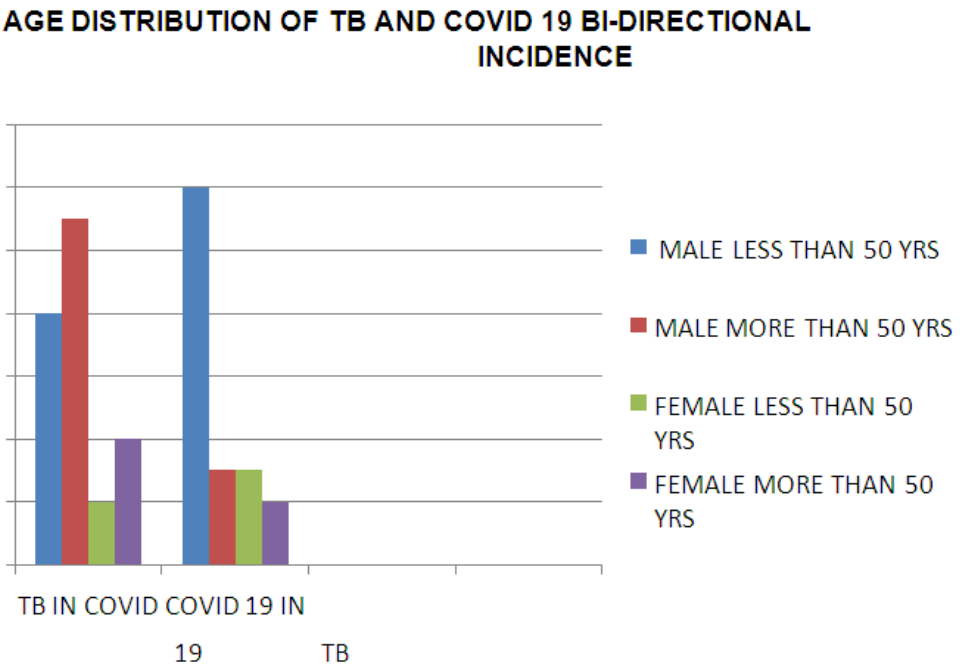
Out of 2004 COVID 19 positive patients tested, 25 were sputum positive for MTB which accounts for around 1.25% . Of these 19 were males and 6 were females. Out of 1250 TB patients tested, 20 were positive for COVID 19 which accounts for around 1.60% . Of these 15 were males and 5 were females. In our study incidence of TB in COVID 19 patients was more in elderly males between age 61-70 years where as COVID 19 in co-existing TB infection was more in young males of age 31-40 years.

SEX DISTRIBUTION OF INCIDENCE OF TB IN COVID 19





11-20 years	1	0
21-30 years	2	1
31-40 years	2	1
41-50 years	3	0
51-60 years	4	1
61-70 years	5	3
71-80 years	2	0
TOTAL	19	6



AGE WISE DISTRIBUTION OF COVID 19 IN TB PATIENTS

11-20 years	1	1
21-30 years	1	0
31-40 years	9	0
41-50 years	1	2
51-60 years	3	1
61-70 years	0	1
71-80 years	0	0
Total	15	5

IV. DISCUSSION:

The prevalence of TB among COVID 19 patients has been found to be 0.37% to 4.47% [1]. India being a high TB burden country and factors like malnutrition, over crowding, self isolation during covid, poverty, lack of education and awareness, social stigma result in increased spread of TB and COVID 19 among households. Presence of risk factors like diabetes mellitus, pre-existing lung diseases, CKD also predispose to severe illness among TB and COVID 19 co-infection patients. Pre or co-existing TB will affect categorisation of COVID 19 illness as well as treatment outcomes. COVID 19 cause compromised lung function and use of immunomodulators in the treatment of moderate to severe covid 19 predisposes to new TB infection or activation of latent TB. Although there is little evidence of the effect of COVID 19 on TB, some studies concluded the negative impact on TB by human corona viruses which are known to cause fatal
2 respiratory diseases similar to SARS CoV .

V. CONCLUSION:

In view of the above considerations, it is important to ensure active TB case finding, home based diagnosis and treatment instead of hospital admissions(except severe cases)to avoid risk of transmission, simultaneous testing of TB and COVID 19 (as clinical features are common to both, similar mode of exposure

to both, presence of a risk factor for poor outcomes to both) specially in old age, patients with co-morbidities like T2DM,COPD,CKD; severe COVID
19 infection requiring ICU admission and mechanical ventilation . In our study, 1.25% of COVID 19 patients had PTB and 1.60% of TB patients had COVID 19. Bi-directional COVID 19 and TB testing is mandatory for better management of cases and to reduce the morbidity and mortaility in countries like India.

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