



Figure 3 – Knowledge on the modes of prevention in both countries

Conclusions

Awareness of the population about a disease is a key factor to control the disease in that particular country. The public awareness about cholera in Belarus is statistically better than that in Sri Lanka. This might have probably assisted the health sector to control the spread of Cholera in Belarus and eradicate the disease. Sri Lanka is still having a high risk of cholera spread due to its high temperature climate as well as the lesser public awareness about the disease.

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УДК 616-002.5:616.24-002

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DEVELOPMENT OF TB AND RETROSPECTIVE ANALYTICAL STUDY AND THEIR EFFECTS IN PREVENTING AND REDUCING THE SEVERITY OF PNEUMONIA SARS COV-2

Introduction

The research was conducted on 7820 patients in total (3121 normal out of 7820 scan) during their admission in TB medical institutions and record data of SARS CoV-2 patients in the department of internal medicine at Govt. Medical Hospital KOTA, Rajasthan INDIA [1] including patients from Gomel state govt. TB hospital Gomel, BELARUS in total 3026 patients were used in research excluding healed or asymptomatic patients.

- We analyzed history record data of patients infected by SARS CoV-2 with TB infections GOMEL Belarus.

- and Research conducted on 2834 Cov-2 & 149 TB patients in Govt. Public Hospital Kota Rajasthan, India [1].

During the characteristics comparison of TB and COVID 19 we found some dramatic data. Every analysis was done twice in this study to remove the bias that was present due to asymptomatic COVID-19 patients diagnosed as result of aggressive screening and contact tracing. We compared all positive patients, followed by symptomatic COVID-19 and TB patients (2834 vs 192). The separate analyses did not show substantial differences, and for the CTSS & CO-RADS scores and in two variables, which will be enumerated later. The following results will focus on the comparison of symptomatic patient. Both infection is responsible for ARDS (acute respiratory distress syndrome).

Goal

The greatest concern of physicians around the world is caused by the effect of SARS CoV-2 on the pulmonary system and TB pulmonary complications, since they often lead to acute conditions requiring emergency medical care and as a result, lead to persistent disorders of internal organs and even death. The study is mean to assess immunomodulatory effects [2] of TB in preventing and reducing the severity of covid-19 pneumonia in the population by assessing chest CT scans data of patients with and without Covid-19 infection.

Material and Methods of research

All hospitalized patients in the region of Kota city Rajasthan India, and TB hospital Gomel BELARUS with laboratory confirmed COVID-19 were included in the study. In this retrospective analytical study, data of 7820 patients were collected. Chest CT scans were reviewed for present or past stigmata of pulmonary TB, CO-RADS [3] and CT severity score(CTSS) [4]. Statistical analysis was done for class wise frequency distribution and association of attributes were calculated. Patients still admitted in the isolation wards were omitted from the study to remove any possible bias in outcome. SARS COV-2 and TB were diagnosed on the basis of the WHO interim guidance [5]. A confirmed case of COVID-19 was defined as a positive result by real-time reverse transcriptase-polymerase-chain reaction (RT-PCR) assay of nasal and pharyngeal swab specimens. Only laboratory-confirmed cases were included in the analysis.

The results of the research and their discussion

Despite being taken from different time periods, both pulmonary diseases showed certain parallels as well as marked differences. Increased prevalence in male population and abnormalities found on chest X-rays and CTSS were some of the similarities. At the same time, poor baseline clinical status, multi organ involvement, increased complications, requirement of life support, and finally mortality were startlingly high in only covid cases, whereas constitutional symptoms, cardiac complications, and ARDS less responsive to standard management were associated in TB with SARS CoV-2. showed a higher recovery number in recovery the value is subjective to change keeping in mind the dynamic state of the pandemic. A specific treatment of the ongoing pandemic is still awaited but antivirals, anticoagulants, and antibiotics along with supportive management have helped to control the disease a bit (table 1).

Table 1 – Demographic details and details of chest CTSS findings (3121 normal out of 7820 scan)

Particulars	Male patients	Female patients	Total
Total CTSS findings	5394	2426	7820
Active TB cases	540	251	791
Healed / old TB cases	630	262	892
Only SARS CoV-2 pneumonia	2091	743	2834
TB & SARS CoV-2 pneumonia	144	48	192

During this pandemic many studies have described protective effects of Bacillus Calmette-Guerin(BCG) vaccine in reducing COVID-19 associated mortality. Only SARS CoV-2 pneumonia (2834) TB & SARS CoV-2 pneumonia (192) patients were used in further research work (total 3026 patients) (table 2).

Table 2 – Estimate of probability of TB and Covid-19 pneumonia cases with CT severity score

CTSS with morbidity combination	Mild CTSS		Moderate CTSS		Severe CTSS		Total
	Only Cov-2	CoV-2 & TB	Only Cov-2	CoV-2 & TB	Only Cov-2	CoV-2 & TB	
Cases	1347	110	1082	66	417	14	3026
Percentage	44.26 %	3.6 %	35.86 %	2.17 %	13.73 %	0.46 %	100 %

Conclusions

A major difference was seen in critically ill patients. The frequency of complications and deaths were definitely more in SARS CoV-2, but the course was predictable with higher sequential organ failure scores at admission. Increased requirement of vasopressors, ventilator support in case of development of ARDS was also commonly seen in TB cases. What made even the small number of cases of ARDS and deaths in COVID-19 daunting was the unpredictable nature and poor response to the standard protocol. A higher PaO₂/FiO₂ level in the setting of ARDS and poor response to customary management have made the situation worse. During this pandemic many studies have described protective effects of Bacillus Calmette-Guerin (BCG) vaccine [6] in reducing COVID-19 associated mortality. The full mechanism is however not thoroughly understood and yet remains unexplained; however there have been suggestions that link BCG vaccine to trigger non-specific innate immunity [6], which is thought to be protective against Covid-19 pneumonia. Few studies have focused on finding association between latent tuberculosis infection (LTBI) and Covid-19 pneumonia. However, all these studies have been focused upon epidemiological data, rather than direct individual observation on chest CT scan. The present study is based on the data of chest CT scans, including Covid-19 patients, which provides more objective findings and hence a better radiological understanding.

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