Research Article

A Study of Prevalence of COVID 19 brought for Medico-Legal Autopsy at Tertiary Teaching Hospital Jammu

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How to cite this article: Sandhya Arora, Vinka Maini. A Study of Prevalence of COVID 19 brought for Medico-Legal Autopsy at Tertiary Teaching Hospital Jammu. Indian Journal of Forensic Medicine and Toxicology 2023;17(4).

Abstract

Introduction: SARS-CoV-2 has killed millions of people around the world. COVID-19 cases and deaths have continued to rise globally, with an estimated 4.6 million new cases and 79 000 new deaths every week. Since the beginning of the epidemic, there have been approximately 75 million recorded illnesses and 1.6 million fatalities worldwide.

Aims and Objective: To study of prevalence of COVID 19 brought for medico-legal autopsy at tertiary teaching hospital**.**

Methodology: This was a cross-sectional study carried out at Autopsy centre attached to the department of Forensic and Toxicology of a tertiary teaching hospital during the one year period i.e. November 2020 to November 2021. The details of the patients like age, gender etc. noted. The data was entered to excel sheet analyzed by Excel software for windows 10.

Result: Out of the total 473 dead bodies brought for medico-legal autopsy 35 i.e. 7.40% found COVID 19 positive hence the prevalence of COVID 19 was 7.40%. Most common cause dead bodies brought for medico-legal autopsy was Hanging in 31.43%, followed by Drug overdose in 22.86%, RTA in 20.00%, Poisoning in 17.14%, Fire arm injuiry in 5.71%, Drowning in 2.86% The majority of the dead bodies were in the age group of 30-40 were 34.29%, 40-50 were 25.71%, 50-60 were 20.00%, >60 were 11.43%, 20-30 were 8.57%. The majority of the dead bodies were Males i.e. 71.43% and 28.57%.

Conclusion: It can be concluded from our study that the prevalence of COVID 19 does not differed significantly in the dead bodies brought for the autopsy than the general populations and the medico-legal aspects of the deaths associated with COVID 19 should be studied in details

Key words: COVID 19, Autopsy of COVID 19, Prevalence of COVID 19 in General population

Introduction

SARS-CoV-2 has killed millions of people around the world. COVID-19 cases and deaths have continued to rise globally, with an estimated 4.6 million new cases and 79 000 new deaths every week. Since the beginning of the epidemic, there have been approximately 75 million recorded illnesses and 1.6 million fatalities worldwide [1].

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The virus spreads through respiratory droplets in living people, and the conjunctival and bronchial epithelium have been identified potential infection gateways[2]. The identification of SARS CoV-2 ribonucleic acid (RNA) on respiratory specimens is the gold standard for diagnosing the infection.

To assess the proportion of a community already infected with severe acute respiratory syndrome coronavirus-2, population-based serosurveys are proposed (SARS-CoV-2). Repeated cross-sectional serosurveys in the same geographic location offer estimates that can be used to track trends over time (World Health Organization, 2020a)[3]. For public health decision makers, data from repeated cross-sectional surveys is useful in developing and revising containment measures. According to Chen et al(2021)[4] .'s metaanalysis, the overall global seroprevalence of SARS-CoV-2 in the general population was 8.0 percent.

India has the second highest reported number of cases of coronavirus disease 2019 (COVID-19) globally, with more than 10 million laboratory-confirmed illnesses and approximately 150,000 recorded deaths as of 31 December 2020 (World Health Organization, 2020b)[5]. The nationwide curfew imposed in India between March and May 2020 was gradually lifted beginning in June 2020, allowing individuals to travel between states and districts and economic activity to resume (Ministry of Home Affairs, Government of India, 2020, 2021). Two population-based serial serosurveys conducted in 70 Indian districts revealed a 10-fold increase in the prevalence of SARS-CoV-2 infection among adults, from 0.73 percent [95 percent confidence interval (CI) 0.34–1.13 percent] in May–June 2020 to 7.1 percent (95 percent CI 6.2–8.2 percent) in August–September 2020. (Murhekar et al., 2020, 2021)[6]. Because of advances in testing capacity and the number of tests performed in the country, the number of infections per reported COVID-19 case declined from 81.6–130.1 in May–June 2020 to 26–32 in August–September 2020. (Murhekar et al., 2020, 2021)[6]

We have done study of prevalence of COVID 19 brought for medico-legal autopsy at tertiary teaching hospital.

Methodology

This was a cross-sectional study carried out at Autopsy centre attached to the department of Forensic and Toxicology of a tertiary teaching hospital during the one year period i.e. November 2020 to November 2021 during the one year period all the dead bodies brought for postmortem were undergone screening for the COVID 19 disease as per the universal standard protocol and tested by Rapid antigen and RT –PCR testing's those who were either positive by RT-PCR or Rapid Antigen were considered positive. The details of the patients like age, gender etc. noted . The data was entered to excel sheet analyzed by Excel software for windows 10.

Result

Table 1: Prevalence of COVID 19 among the cadavers brought for medico-legal autopsy

COVID 19 status	No.	Percentage (%)
COVID 19 Positive	35	7.40
COVID 19 Negative	438	92.60
Total	473	100.00

Out of the total 473 dead bodies brought for medico-legal autopsy 35 i.e. 7.40 % found COVID 19 positive hence the prevalence of COVID 19 was 7.40%.

Table 2: Various causes for which dead bodies brought for medico-legal autopsy

Causes	No.	Percentage (%)
Hanging	11	31.43
Drug overdose	8	22.86
RTA	7	20.00
Poisoning	6	17.14
Fire arm	2	5.71
Drowning	1	2.86
Total	35	100.00

Most common cause dead bodies brought for medico-legal autopsy was Hanging in 31.43%, followed by Drug overdose in 22.86%, RTA in 20.00%, Poisoning in 17.14%, Fire arm injuiry in 5.71%, Drowning in 2.86%.

Table 3: Distribution of the COVID 19 dead bodies as per the age

Age group	No.	Percentage (%)
20-30	3	8.57
30-40	12	34.29
40-50	9	25.71
50-60	7	20.00
>60	4	11.43
Total	35	100.00

The majority of the dead bodies were in the age group of 30-40 were 34.29%, 40-50 were 25.71%, 50-60 were 20.00%, >60 were 11.43%, 20-30 were 8.57%.

Table 4: Gender wise distribution of the COVID 19 dead bodies

Gender	No.	Percentage (%)
Male	25	71.43
Female	10	28.57
Total	35	100.00

The majority of the dead bodies were Males i.e. 71.43% and 28.57%.

Discussion

According to the findings of the third serosurvey, by December 2020, over 24% of India's population aged 10 years had been exposed to SARS-CoV2, with an estimated 271 million illnesses. Seroprevalence did not differ by gender, however it was lower in adults aged 18–44 years and in rural areas than in urban areas. The findings also show that around a quarter of HCWs working in public-sector health facilities in the periphery tested positive for IgG antibodies In the study done by Manoj V. Murhekar[12]antibody tests were employed to detect IgG against SARS-N CoV-2's and S1- RBD proteins. For the identification of antibodies in slightly infected patients with absent or delayed SARS-CoV-2 antibody responses, N-protein assays are claimed to be more sensitive than S1 assays (zçürümez et al., 2020[7]; van Tol et al[8]., 2020). Anti-N antibodies have been reported to emerge earlier than anti-S antibodies, which may boost the clinical sensitivity of the assay if samples are drawn early (Rikhtegaran Tehrani et al., 2020)[9]. 800 people tested positive for the N-protein but negative for the S1-RBD protein in the third serosurvey, possibly indicating early infections. The IgG antibody response to various viral antigens is diverse, and the results do not always agree (McAndrews et al., 2020)[10]. To confirm the findings and avoid false-negative outcomes in surveillance investigations, high sensitivity and specificity antibody detection against two separate antigens is required (Irsara et al., 2021)[11].

Out of the total 473 dead bodies brought for medico-legal autopsy 35 i.e. 7.40 % found COVID 19 positive hence the prevalence of COVID 19 was 7.40%.

It was similar to Manoj V. Murhekar[12] they found the prevalence of COVID 19 among the general population was 8.9% this can be explained as the rate of COVID 19 infection in dead bodies brought for autopsy may be similar to general population

Most common cause dead bodies brought for medico-legal autopsy was Hanging in 31.43%, followed by Drug overdose in 22.86%, RTA in 20.00%, Poisoning in 17.14%, Fire arm injuiry in 5.71%, Drowning in 2.86 % The majority of the dead bodies were in the age group of 30-40 were 34.29%, 40-50 were 25.71%, 50-60 were 20.00%, >60 were 11.43%, 20-30 were 8.57%.The majority of the dead bodies were Males i.e. 71.43% and 28.57%.

This was similar to Rahul Agrawal [13] et al they found out of 2197 cases were analyzed in which 609 (27.8%) were females and 1588 (72.2%) were males. Major causes of death comprises trauma 818 (37.2%) burn 277 (12.6%) poisoning 238 (10.8%) asphyxia 237 (10.7%) and multiple pathology 146 (6.6%). Opinion about the cause of death was reserved in 310 (14.1%).

Conclusion

It can be concluded from our study that the prevalence of COVID 19 does not differed significantly in the dead bodies brought for the autopsy than the general populations and the medico-legal aspects of the deaths associated with COVID 19 should be studied in details

Conflict of interest: Nil

Source of funding: Nil

Ethical clearance taken from Institutional Ethical Committee

Data collected after taking permission from the Head of the Department of Forensic Medicine GMC Jammu

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