



RETROSPECTIVE ANALYSIS OF CLINICAL TRENDS OF SEXUALLY TRANSMITTED INFECTIONS IN PRE-COVID AND POST-COVID ERA AMONG ATTENDEES OF STI CLINIC IN TERTIARY CARE CENTRE IN SOUTH INDIA

Dermatology

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ABSTRACT

Background The global COVID-19 pandemic was not only directly responsible for immeasurable COVID-related morbidity and mortality but also had an indirect impact on incidence and transmission profile of various Sexually Transmitted Infections (STIs) due to sexual distancing and service interruption. Long-term implications of these conflicting factors on the STI epidemic have not yet been fully gauged. **Aim of study** To evaluate the prevalence and pattern of STIs in an earmarked population before, during and after the COVID pandemic. **Methods** A retrospective analysis of patients who reported to STI OPD of a tertiary care centre in South India over 5 years from 2018 to 2022 was performed and the varying clinical trends, prevalence and transmission dynamics of sexually transmitted infections were analyzed. **Results** The prevalence of STI in patients reported has been recorded at 12.83% (2018), 12.30% (2019), 13.01% (2020), 7.80% (2021) and 7.45 % (2022). The increased prevalence of STIs in 2020 may be due to the reduced overall census in STI Clinic. True to service interruption, HIV cases in year 2020 was recorded at an all-time low of 32 followed by an increase to 103 and 101 in 2021 and 2022 respectively. Bacterial STIs, especially Syphilis, have displayed a rising trend as evident by the prevalence of 11.05% in 2022, as opposed to the prevalence of 3.24% in 2018. **Conclusion** The shift in STI clinical trends could be partly attributed to the restrictive measures enforced by the Government during COVID and partly by psychosocial behavioural changes brought about by the post-COVID pandemic situation. The increasing trend of bacterial STIs in the post COVID years has to be curtailed with targeted interventions. Preventive and early treatment strategies among high-risk behaviour groups need to be strengthened to keep the STIs under control in post covid era.

KEYWORDS

INTRODUCTION

The 2019 COVID-19 global pandemic caused sizeable morbidity and mortality by infecting a large number of people and also had an even wider obscure effect on issues ranging from psychological to sexual practices which was not directly quantifiable. This grey area has not yet been delved into and is under scrutiny. With the pandemic came two concepts relatively unheard of. First was Sexual distancing, a consequence of social distancing.

This practice brought about an interruption in unprotected sexual activity which reduced incidence of STIs. The second concept was service interruption where patients on regular treatment could not get their monthly medication especially HIV infected.

Also, the undiagnosed STI patients who could not avail the diagnostic tests, themselves became ground zero and ended up transmitting to multiple contacts. All this led to an increase in transmission.

The impact of COVID-19 can be studied under three categories- Pre-COVID, during and Post-COVID. In pre-COVID era, the public had no restrictions and access to both high risk behaviour and adequate healthcare resources resulting in both unchecked exposure and unlimited access to appropriate treatment.

During COVID, as all day-to-day life was brought to a halt, so was unconstrained exposure especially in hotspots and in high risk groups. The downside was the interruption of service transmission which may have resulted in increased transmission.

The Post-COVID era was monitored apprehensively for a rebound increase in STI incidence due to untoward sexual activity. However, contrary to all beliefs a consistent fall as compared to the pre-pandemic statistics in the prevalence of STIs has been recorded for two years after the pandemic which is indicative of a change in the psychosexual behavioural pattern of the people.

AIMS AND OBJECTIVES

- To study the clinical trends of STIs in pre-COVID, during COVID and post-COVID era.
- To analyse impact of the pandemic on High Risk Groups and consequential effect on the population under study.

MATERIALS AND METHODS

Study design: Retrospective observational study.

Sample:

Study population composed of attendees in an STI Clinic over a period of 5 years from January 2018 to December 2022 in Government Vellore Medical College, Vellore-11, Tamilnadu

METHODS:

The documented case records of patients who attended the STI clinic were analysed wherein clinical and sexual history was noted and the diagnosis reached were recorded.

Serological tests for syphilis including VDRL and TPHA were performed.

In case of genital ulcers, Dark ground microscopy for *T. pallidum*, gram stains for *H. ducreyi* and Tzanck test for multinucleated giant cells of HSV were done.

In case of genital discharges, the following tests were done,

- Wet film for trichomonas vaginalis.
- 10% KOH for *Candida albicans*.
- Gram stain for *Neisseria gonorrhoea*, *Candida albicans* and clue cells in urethral and cervical smears.

Patients diagnosed were treated according to syndromic management. A meticulous record of patient statistics were maintained. The collected data was compiled and analysed from January 2018 to December 2022.

RESULTS

Total attendees of STI clinic were recorded at 7200(2018), 6297(2019), 3626(2020), 5035(2021) and 7885(2022) persons. Out of them, 924(2018), 778(2019), 472(2020), 3939(2021), 588(2022) were found to have STIs respectively [Tab 1].

The attendance of High Risk Behaviour Group population at STI OPD was at 3.36% (242 in 2018), 2.98% (188 in 2019), 2.99% (145 in 2020), 1.62% (82 in 2021) and 1.97% (156 in 2022)[Tab 2].

Prevalence of STIs was recorded at 12.83%, 12.30%, 13.01%, 7.80% and 7.45% over the 5 consecutive years from 2018 to 2022 respectively [Tab 3].

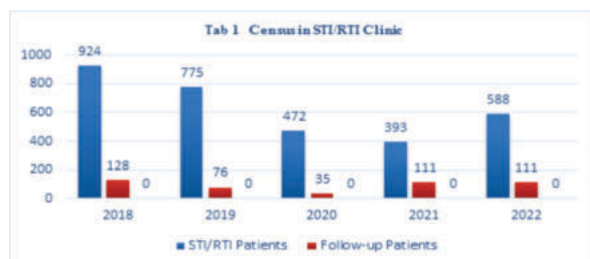
Sexually Transmitted Infections showed a declining trend from the pre-COVID era to the post-COVID era with the exception of syphilis. Its prevalence rose to 11.39% in 2022 from 3.67% in 2018. The prevalence of Syphilis was recorded at 3.67% (34 in 2018), 6.19% (48 in 2019), 2.96% (14 in 2020), 9.66% (38 in 2021) and 11.39% (67 in 2022).

The prevalence of viral infections (excluding HIV) was at 6.81%(63 in 2018), 4.90%(38 in 2019), 4.02%(19 in 2020), 5.59%(22 in 2021) and 3.23%(19 in 2022).

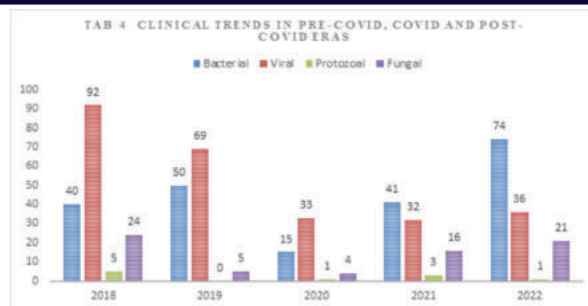
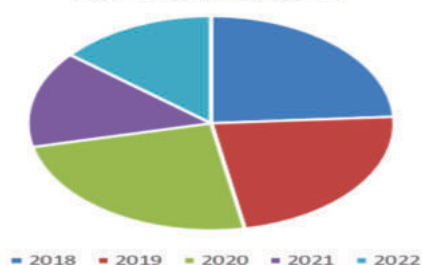
The number of PLHIV attendees were noted as 13.41%(124 in 2018), 16%(124 in 2019), 6.77%(32 in 2020), 26.20%(103 in 2021) and 17.17%(101 in 2022). The newly diagnosed HIV cases were recorded at 2.05%(19 patients in 2018), 2.70%(21 in 2019), 2.96%(14 in 2020), 2.54%(10 in 2021) and 2.89%(17 in 2022). The PLHIV attendees were recorded at a declining rate in the STI OP especially in 2020 when the pandemic was at its peak.

The prevalence of protozoal infections was 0.5%(5 in 2018), 0.2%(1 in 2020), 0.7%(3 in 2021) and 0.17%(1 in 2022). The prevalence of fungal infections was 2.59%(49 in 2018), 0.65%(14 in 2019), 0.87%(16 in 2020), 4.07%(23 in 2021) and 3.57%(22 in 2022).

In the pre-COVID years (2018, 2019) and during the COVID pandemic (2020), viral STIs outnumbered the bacterial STIs whereas in the post-COVID years bacterial STIs showed an increase over the viral STIs [Tab 4].



Tab 3 PREVALENCE OF STIs



DISCUSSION

This study hopes to shed light on the impact of COVID on STI trends by analysing data from 2018 to 2022.

Our study reflected an overall decline in STI attendees during the pandemic in comparison to the pre-pandemic situation similar to Gupta et al and Jun Tao et al study.^[1,2]

Once the situation improved, the attendees of STI clinic showed a marginal increase compared to the pre-COVID and COVID years. This increase is probably attributed to increased awareness about STIs because of increase in digitalisation during COVID. On the other hand, we noted a declining trend in the attendance of High Risk behaviour Groups to the STI OPD during the post-COVID years when compared to the pre-COVID years. The probable factor involved in the declining trend has to be analysed whether it's due to the apprehension of contracting COVID secondary to frequent hospital visits or an actual decline in sexual behaviour in High Risk Groups due to sexual distancing.^[3]

STI prevalence was found to be in a declining trend consecutively throughout the years even though there is an increase in STI attendance post-COVID (2022). It is too early to presume if this declining trend of STI is due to social distancing/sexual distancing because of COVID. We need more studies over a prolonged period to establish the results of our study.

In pre-COVID era, viral STIs were the predominant STIs in our study which is in accordance to Narayanan B. et al, Thappa et al and Arora Chetna et al.^[4,5,6] Though Talukdar et al, a pre-pandemic study, has contradicted this and stated Syphilis as the most common STI.^[7]

We could observe an increasing trend in prevalence of bacterial STIs over the viral STIs in post pandemic years. This might be attributed to decrease in accessing the services for diagnosis and a delay in initiation of antibiotic therapy due to service interruption during and post-COVID.

Among the bacterial STIs, we could see the great imitator, Syphilis, making a backdoor entry to top the list of bacterial STIs which reflects that more of an awareness, early intervention and partner notification strategies in the line of syphilis has to be re-established by the government and non-profitable organizations.^[8]

The services to the People Living with HIV were affected the most during and post-COVID years secondary to stringent measures imposed by the government. This is reflected by the declining trend in the attendees of PLHIV population in the STI OPD as per our study. In addition to the service interruption, COVID-19 co-infection has also wreaked great havoc in the lives of PLHIV people.^[9]

Though there is a clear cut decline in STI prevalence in our study still there are many areas like outreach activities, accessibility of services to high-risk groups, availability of diagnostic and therapeutic procedures that remain unaddressed, which need to be improved to sustain this steady decline in STIs. If not ensured actively, the unprecedented rise in STIs is imminent.

CONCLUSION

While COVID was a critical pandemic with large casualties in a shorter period of time, it should be kept in mind that STI/RTI is a smouldering pandemic which has been present for centuries. The temporary decrease in STI/RTI attendees and cases during the pandemic could be best labelled as misleading as evident by the rebound rise once the restrictions were lifted as the statistics testify.

Our study highlights the importance of surveillance, early diagnosis and combined strategies to control and manage STDs in case another unforeseen wave of pandemic arrives.

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