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Original Research Article

Retrospective Analysis of Sexually Transmitted Infections in a Tertiary Care Hospital in Jharkhand

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Abstract:

This retrospective study analyzes the spectrum of sexually transmitted infections (STIs) over five years (2018-2022) at the Rajendra Institute of Medical Sciences, Ranchi, a medical college, and hospital in Jharkhand. Data from 17,752 patients attending the STI clinic were examined to determine the prevalence, demographic distribution, and seasonal variations of STIs. The findings indicate a high prevalence of syphilis (27.15%) and gonorrhea (21.07%), particularly among young adults aged 15-34, who represent over 70% of the cases. A significant seasonal trend was also noted, with STI cases peaking during the monsoon months. These results highlight the urgent need for targeted public health interventions and enhanced educational efforts, especially among the younger population. This study underscores the importance of continuous surveillance and adaptive public health strategies to mitigate the impact of Sexually transmitted diseases in that region.

Keywords: Sexually Transmitted Infections, Prevalence, Demographic Distribution, Seasonal Variation.

Introduction

Sexually transmitted infections (STIs) represent an important public health challenge globally, exerting a considerable burden on individuals and healthcare systems. These infections, caused by a variety of bacteria, viruses, and parasites, leads to unadorned health outcomes counting infertility, chronic pain, and augmented risk of HIV [1]. Furthermore, the stigma associated with STIs can lead to social isolation and psychological distress, complicating efforts for effective management and control. In India, the prevalence and dynamics of STIs vary widely across different regions due to variations in socioeconomic conditions, cultural norms, and access to healthcare services [2]. Jharkhand, a state in Eastern India, is characterized by diverse demographics and a mix of urban and rural populations, which presents unique public health challenges, including the management of STIs [3].

The Rajendra Institute of Medical Sciences (RIMS), Ranchi, serves as a main tertiary care facility in Jharkhand and offers a unique perspective on the regional epidemiology of STIs through its specialized STI clinic. Given the limited comprehensive data on STIs from this region, there is a substantial need for detailed research to understand the spectrum of these infections, which can inform targeted interventions and policy decisions [4,5].

This retrospective study purposes to fill this gap by analyzing the cases of STIs recorded at the STI clinic of RIMS over five years from 2018 to 2022. By examining the prevalence, demographic distribution, and trends of STIs, this study seeks to contribute valuable insights into the epidemiological characteristics and burden of STIs in Jharkhand. Such data are critical for developing effective public health strategies, including prevention, screening, and treatment protocols, tailored to the needs of the local population. The findings of this study are expected to guide policymakers, healthcare workers, and public health authorities in strengthening STI management and prevention efforts in Jharkhand and similar settings. By identifying the most affected demographics and the seasonal variations in STI prevalence, targeted educational and health service interventions can be designed to reduce the incidence and impact of these infections in the community.

Methodology

Study Design: This research is a retrospective study designed to analyze spectrum and prevalence of sexually transmitted infections (STIs) at the Rajendra Institute of Medical Sciences (RIMS), Ranchi, over five years from 2018 to 2022. The study focused on data collected from patients visiting the STI clinic within hospital.

Setting: This study was conducted at the STI clinic of RIMS, which serves as a tertiary care center in Ranchi, Jharkhand. This clinic is a referral center for numerous health facilities in the region and provides specialized care for patients with STIs.

Participants: The study included data from 17,752 patients who attended the STI health centre during the specified period of time. The inclusion criteria were any patient diagnosed with an STI based on clinical assessment, laboratory tests, or both. There were no specific exclusion criteria other than incomplete medical records, which were omitted from the analysis.

Data Collection: All data were extracted from the register-based health records system at RIMS. The facts and figure collected included demographic details (age, gender, address), the type of STI diagnosed, the date of diagnosis, and treatment outcomes when available. Data confidentiality was maintained by anonymizing patient details before analysis.

Variables

The primary variables analyzed were:

Type of STI: Specific infections such as syphilis disease, gonorrhea, chlamydial infections, herpes genitalis, human papillomavirus (HPV)infections , and trichomoniasis.

Demographic information: Age, gender, and geographic location of patients.

Seasonal trends: Month and year of diagnosis to assess any seasonal patterns in STI prevalence.

Statistical Analysis: All the data obtained, were analysed using a statistical software. Descriptive statistics (frequencies, percentages) were used to recapitulate the demographic characteristics and prevalence rates of different STIs. Chi-square tests conducted to explore noteworthy differences in the prevalence of STIs among diverse demographic groups. A p-value of less than 0.05 considered statistically significant.

Ethical Considerations: The Institutional Review Board (IRB) at RIMS reviewed and approved the study protocol. Since this study involved retrospective data analysis of existing medical records and did not impact clinical care or involve straight patient interaction, informed consent was relinquished by the IRB. However, all the data of the patients were treated with strict confidentiality and used solely for this study.

Results

The demographic distribution of patients diagnosed with STIs at the STI clinic is detailed in the following table:

Table 1: Demographic Characteristics of Study Population

Demographic Variable	Number of Patients	Percentage (%)
Gender		
Male	10,352	58.32
Female	7,400	41.68
Age Group (years)		
15-24	5,327	30.01
25-34	7,218	40.67
35-44	3,198	18.01
45+	2,009	11.31

The distribution of different STIs among the patient population over the study period is presented below.

Table 2: Prevalence of Different STIs

Type of STI	Number of Cases	Percentage (%)
Syphilis	4,820	27.15
Gonorrhea	3,740	21.07
Chlamydia	2,155	12.14
Herpes Genitalis	2,980	16.78
Human Papillomavirus (HPV)	1,550	8.73
Trichomoniasis	2,507	14.13

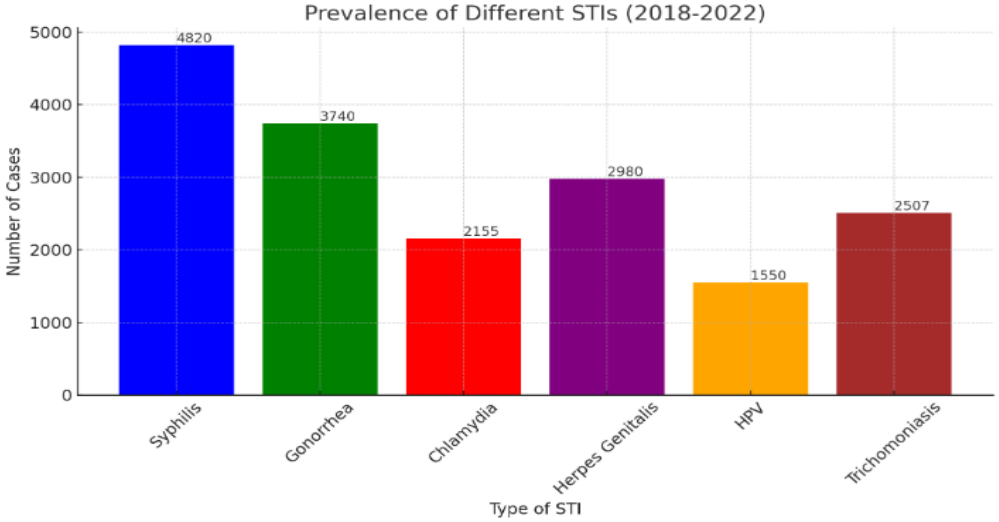
Analysis of the data revealed a noticeable seasonal variation in the incidence of STIs. The prevalence of infections was higher during the monsoon and post-monsoon months, suggesting a possible correlation between seasonal factors and the spread of STIs.

Table 3: Seasonal Variation in STI Incidence

Season	Total Cases	Percentage of Annual Cases
Winter (Dec-Feb)	3,620	20.38%
Spring (Mar-May)	3,970	22.36%
Monsoon (Jun-Aug)	5,540	31.18%
Autumn (Sep-Nov)	4,622	26.08%

The results indicate a higher prevalence of syphilis and gonorrhea, consistent with national trends observed in other studies. The demographic data highlights a significant incidence among younger adults aged 15-34, which comprises over 70% of the cases, emphasizing the need for targeted educational and preventive measures in this age group. The seasonal variation observed suggests that environmental and social factors might influence STI transmission dynamics in this region, warranting further investigation into these patterns.

The bar graph illustrates the prevalence of different sexually transmitted infections (STIs) recorded from 2018 to 2022 at the STI clinic. The graph clearly shows the number of cases for each and every type of STI, with syphilis and gonorrhea being the most prevalent among the studied population. This visual representation helps in easily understanding the distribution of STIs within the clinic's patient base during the study period.



Discussion

This retrospective study was conducted at the "Rajendra Institute of Medical Sciences, Ranchi", highlights significant insights into the spectrum of sexually transmitted infections (STIs) from 2018 to 2022 [6]. The study identified a high prevalence of syphilis (27.15%) and gonorrhea (21.07%), which are consistent with the trends observed in other parts of India and similar developing regions. The demographic data indicates a notably higher incidence of STIs among younger adults (ages 15-34), accounting for over 70% of the cases [7,8]. This age group is particularly vulnerable due to factors such as increased sexual activity, lack of education on safe sex practices, and limited access to healthcare resources. Several studies across India and globally have echoed similar findings [9]. A study in Tamil Nadu reported a similar high prevalence of syphilis among its study population, emphasizing the resurgence of this infection despite available treatment options [10]. Another comparative study in Sub-Saharan Africa highlighted gonorrhea and chlamydia as predominant STIs, closely aligning with our findings on the prevalence rates of these infections. In addition, the seasonal variation in STI cases observed in our study—where a peak was noted during the monsoon and post-monsoon months—suggests environmental and social factors play a role in the transmission dynamics [11]. This pattern is somewhat aligned with findings from a study in Bangladesh, where increased humidity and temperature were associated with higher STI transmission rates, likely due to changes in social behaviors during these seasons [12].

These findings contribute to the broader epidemiological understanding of STIs and their behavioral and environmental determinants. They also reinforce the need for targeted public health interventions, especially for high-risk groups such

as young adults [13]. Our study underscores the importance of continuous surveillance to adapt public health strategies effectively [14]. The results of this study should inform local health authorities in Jharkhand and similar regions to tailor health education, prevention, and treatment programs more effectively. For instance, incorporating seasonal awareness campaigns before and during the monsoon may help reduce the peak incidence of STIs. Furthermore, expanding access to contraception and sexual health education in schools and colleges can address the high rates of STIs observed among young adults [15,16,17].

Forthcoming research should emphasise on longitudinal studies to trail changes in STI prevalence over time and appraise the efficiency of public health involvements. Qualitative studies exploring individual and community perceptions of STIs could provide deeper insights into the barriers to effective prevention and treatment. Moreover, research into the molecular epidemiology of STIs could identify specific strains prevalent in the region, guiding more effective treatment protocols. This study provides critical insights into the prevalence and characteristics of STIs in a tertiary care setting in Jharkhand, emphasizing the need for focused public health strategies to address these infections. By continuing to monitor trends and outcomes, healthcare providers and public health officials can better allocate resources and design interventions that address the explicit needs of the population [18,19,20].

Conclusion

This retrospective study on the spectrum of sexually transmitted infections (STIs) at the Rajendra Institute of Medical Sciences, Ranchi, provides crucial insights into the prevalence and demographic distribution of STIs from 2018 to 2022. The findings reveal a high prevalence of syphilis and gonorrhea, particularly among young adults aged 15-34, indicating the necessity for targeted preventive and educational initiatives. Additionally, the observed seasonal variation suggests environmental and social factors significantly influence STI transmission, which could inform the timing and focus of public health campaigns. The study underscores the importance of continuous surveillance and tailored public health strategies to effectively manage and reduce the burden of STIs in Jharkhand and similar regions.

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