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CLINICO-MICROBIOLOGICAL SPECTRUM OF INFECTIVE ENDOCARDITIS IN PATIENTS FROM A TERTIARY CARE CENTER IN CENTRAL INDIA

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Abstract: Infective endocarditis (IE) is a serious and potentially life-threatening condition characterized by microbial infection of the endocardial surface of the heart. The clinical and microbiological profile of IE can vary across different geographical regions and healthcare settings. This study aimed to investigate the clinico-microbiological spectrum of infective endocarditis in patients from a tertiary care center in Central India.

A retrospective analysis was conducted on patients diagnosed with infective endocarditis between [time period] at [name of the tertiary care center]. Relevant clinical and microbiological data were collected and analyzed. The study assessed demographic characteristics, predisposing factors, clinical presentation, laboratory findings, echocardiographic findings, microbiological isolates, and treatment outcomes.

Keywords: Infective endocarditis, clinico-microbiological spectrum, tertiary care center, Central India, clinical presentation, microbiological isolates, predisposing factors, echocardiography, treatment outcomes.

INTRODUCTION

Infective endocarditis (IE) is a serious infectious disease characterized by microbial colonization and inflammation of the endocardial surface of the heart. It is associated with significant morbidity and mortality and requires prompt diagnosis and appropriate management. The clinico-microbiological spectrum of IE can vary across different geographical regions and healthcare settings, highlighting the importance of understanding the local patterns and characteristics of the disease. This study aims to investigate the clinico-microbiological spectrum of infective endocarditis in patients from a tertiary care center in Central India.

Central India, a region with a diverse population and unique healthcare dynamics, presents an intriguing context to study the epidemiology, clinical presentation, and microbiological profile of IE. By examining these aspects, healthcare providers can enhance their understanding of the disease, facilitate early diagnosis, and optimize treatment strategies specific to this region.

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The objectives of this study are to assess the demographic characteristics, predisposing factors, clinical presentation, laboratory findings, echocardiographic features, microbiological isolates, and treatment outcomes of patients diagnosed with infective endocarditis at the tertiary care center in Central India. A comprehensive analysis of these factors will provide valuable insights into the disease burden, causative organisms, and clinical course of IE in this particular population.

Understanding the clinico-microbiological spectrum of infective endocarditis in Central India can guide healthcare professionals in making informed decisions regarding diagnosis, management, and prevention strategies. Furthermore, it can contribute to the development of local guidelines and protocols tailored to the unique challenges and characteristics of the region.

By elucidating the specific clinico-microbiological patterns of infective endocarditis in Central India, this study aims to improve patient outcomes, facilitate early intervention, and inform future research endeavors. Ultimately, the findings of this study can aid healthcare providers in delivering more effective and targeted care to patients with infective endocarditis in the region.

METHODS

A retrospective analysis was conducted on patients diagnosed with infective endocarditis at the [name of the tertiary care center] in Central India. The study period spanned from [time period]. The medical records of eligible patients were reviewed, and relevant clinical and microbiological data were extracted.

Demographic information, including age, gender, and comorbidities, was collected. Predisposing factors for IE, such as previous cardiac conditions, dental procedures, intravenous drug use, or prosthetic valve presence, were assessed. Clinical presentation, including symptoms, signs, and duration of illness, was recorded. Laboratory investigations, including blood culture results, complete blood counts, and inflammatory markers, were analyzed.

Echocardiographic findings, such as the presence of vegetation, valvular involvement, and complications, were documented. Microbiological isolates from blood cultures and other relevant samples were identified and analyzed. Antimicrobial susceptibility testing was performed on the isolated organisms when applicable. Treatment regimens, including antimicrobial therapy and surgical interventions, were recorded. Treatment outcomes, including mortality and complications, were assessed.

Descriptive statistical analysis was conducted to summarize the demographic, clinical, and microbiological characteristics of the study population. The clinico-microbiological spectrum of infective endocarditis in patients from the tertiary care center in Central India was explored, highlighting the common pathogens, clinical presentations, and outcomes.

Ethical considerations were taken into account, and appropriate permissions were obtained for data collection and analysis.

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This study provides valuable insights into the clinico-microbiological spectrum of infective endocarditis in patients from a tertiary care center in Central India. The findings can contribute to improved diagnosis, management, and prevention strategies for this serious and challenging condition.

RESULTS

The results of the study revealed the clinico-microbiological spectrum of infective endocarditis in patients from a tertiary care center in Central India. A total of [number] patients diagnosed with infective endocarditis were included in the analysis. The mean age of the patients was [mean age] years, with a male predominance of [percentage]. The most common predisposing factors were [list of common predisposing factors], accounting for [percentage] of the cases.

Clinical presentation varied, with the majority of patients presenting with [common symptoms]. Laboratory investigations showed [findings], including [specific abnormalities]. Echocardiographic findings indicated [percentage] of patients with vegetations, [percentage] with valvular involvement, and [percentage] with complications.

Microbiological analysis identified [number] microbial isolates, with [percentage] being Gram-positive bacteria, [percentage] being Gram-negative bacteria, and [percentage] being fungal pathogens. The most frequently isolated organisms were [common pathogens], with [percentage] of cases. Antimicrobial susceptibility testing revealed [specific findings] among the isolated organisms.

Treatment approaches included antimicrobial therapy, with [percentage] of patients undergoing surgical interventions such as valve replacement or repair. The overall treatment outcomes showed [percentage] of patients achieving complete resolution of the infection, [percentage] experiencing complications, and [percentage] mortality rate.

DISCUSSION

The findings of this study highlight the diverse clinico-microbiological spectrum of infective endocarditis in patients from a tertiary care center in Central India. The predominance of [common predisposing factors] suggests the importance of targeted prevention strategies in this population. The clinical presentation and laboratory findings align with previous studies, emphasizing the need for early recognition and diagnosis.

The prevalence of Gram-positive bacteria as the leading causative pathogens is consistent with global trends, while the occurrence of Gram-negative bacteria and fungal pathogens underscores the importance of broad-spectrum antimicrobial coverage and appropriate empirical therapy. The antimicrobial susceptibility patterns observed provide valuable insights for guiding empirical treatment choices.

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The utilization of surgical interventions in a subset of patients highlights the significance of a multidisciplinary approach and individualized treatment plans. The identification of treatment-related complications underscores the importance of meticulous post-operative care and long-term follow-up.

CONCLUSION

This study provides important insights into the clinico-microbiological spectrum of infective endocarditis in patients from a tertiary care center in Central India. The results emphasize the need for early recognition, prompt diagnosis, and tailored management strategies. The findings can inform clinical decision-making, guide empirical antimicrobial therapy, and improve patient outcomes in this population. Further research and continued surveillance are necessary to monitor the evolving trends in infective endocarditis and optimize the management approaches.

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