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CLINICAL PRESENTATION OF INFECTIVE ENDOCARDITIS IN HOSPITALIZED PATIENTS

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Abstract:

Objective: To investigate the presentation forms, precursor lesions, complications and other clinical parameters related to infective endocarditis.

Study design: A case series.

Place and duration of the study: From May 2016 to May 2017, the study was carried out in Cardiology Department of Rawalpindi Institute of Cardiology for one year duration.

Methodology: Data related to the symptoms, complications, predisposing factors and place of participation of the disease were collected. All patients with the possibility of infectious endocarditis were subjected to trans-thoracic echocardiography. Blood cultures were also sent. Data were analyzed using SPSS version 10.

Results: 86 patients were included in the study. Fever was the most common clinical presentation in the study population (87%). The mitral valve was the most affected area (55% of patients). Most of the patients (77%) had rheumatic valve heart disease as a precursor lesion.

Conclusion: The majority of patients presented with fever. The prevalence of rheumatic heart disease and embolic complications was higher.

Key words: infectious endocarditis, rheumatic heart disease.

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INTRODUCTION:

Endocarditis is a bacterial or fungal infection of the valvular or endocardium surface of the heart. Prototypic injury is a mass of infective endocarditis, vegetation, platelets, fibrin, microorganisms and few inflammatory cells. Infection typically includes: (as natural or prosthetic) heart valves, also abnormal blood as jets, or damage to foreign bodies can occur on the low-pressure side of the ventricular septum at a defect in the wall endocardium or the intracardiac devices themselves. Responsible partner organisms usually include the group's viridans Streptococcus, Enterococcus, *Staphylococcus aureus* and *Streptococcus epidermidis*. Other organisms are rarely reported and included gram negative anaerobe, *Coxiella burnetii*, chlamydia, *Candida*, *Aspergillus* and Histoplasmosis. Beta-hemolytic streptococcal group A (GABS) is a rare cause of *Streptococcus pyogenes* endocarditis. Predisposing cardiac conditions lead to valvular disease, rheumatic fever, a history of endocarditis, congenital heart disease and a pacemaker. Infective endocarditis (IE) is associated with a number of complications. Peripheral systemic embolism is a common and serious complication of

infective endocarditis due to the migration of vegetations. Transthoracic echocardiography is inexpensive, easy to obtain and specific to endocarditis diagnosis. Despite advances in medical, surgical and critical care interventions, infectious endocarditis is associated with significant morbidity and mortality. Therefore, an appropriate diagnosis and adequate, medical or surgical treatment is required. Recommended for patients with infectious endocarditis and congestive heart failure for medical treatment, emergency surgery-induced valve deficiencies, uncomplicated infectious endocarditis for uncomplicated infectious endocarditis, while the patterns are not supported by evidence from randomized trials.

MATERIALS AND METHODS:

This cases series was taken place from May 2016 to May 2017, the study was carried out in Cardiology Department of Rawalpindi Institute of Cardiology for one year duration. All patients diagnosed with infective endocarditis according to Duke Criteria were included in the study.

Duke's Criteria for Infective Endocarditis**Major Criteria**

- Positive echocardiography
- Positive blood culture

Minor Criteria

- Predisposing conditions
- Fever $> 37^{\circ}\text{C}$
- Vascular phenomenon
- Immunologic phenomenon
- Suggestive echocardiogram
- Ambiguous blood culture

Diagnosis of infective endocarditis requires two major, or one major and three minor or five minor criteria.

Data were collected related to disease symptoms (fever, weight loss, anorexia, nausea, arthralgia or myalgia, headache, fatigue, etc.), complications (petechiae, Osler's lymph nodes, Janeway lesions). Roth, subconjunctival hemorrhage, bleeding, splenomegaly, cerebral embolism, etc.), predisposing factors and place of participation. All patients with the possibility of infectious endocarditis were subjected to trans-thoracic echocardiography. Blood cultures were also sent. Patients with strong suspicion of alternative diagnosis were excluded from the study. Data were analyzed using SPSS version 10. The frequencies and percentages of different clinical parameters were calculated.

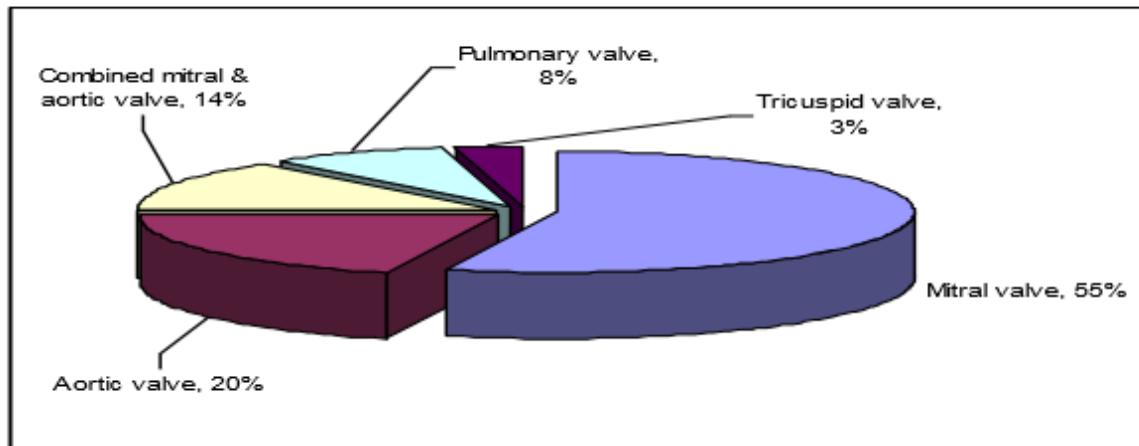
RESULTS:

86 patients were included in the study. In the study group, the most frequent clinical presentation (87%) was fever, loss of appetite, tremor and sweating, fatigue, nausea and weight loss (Table 1).

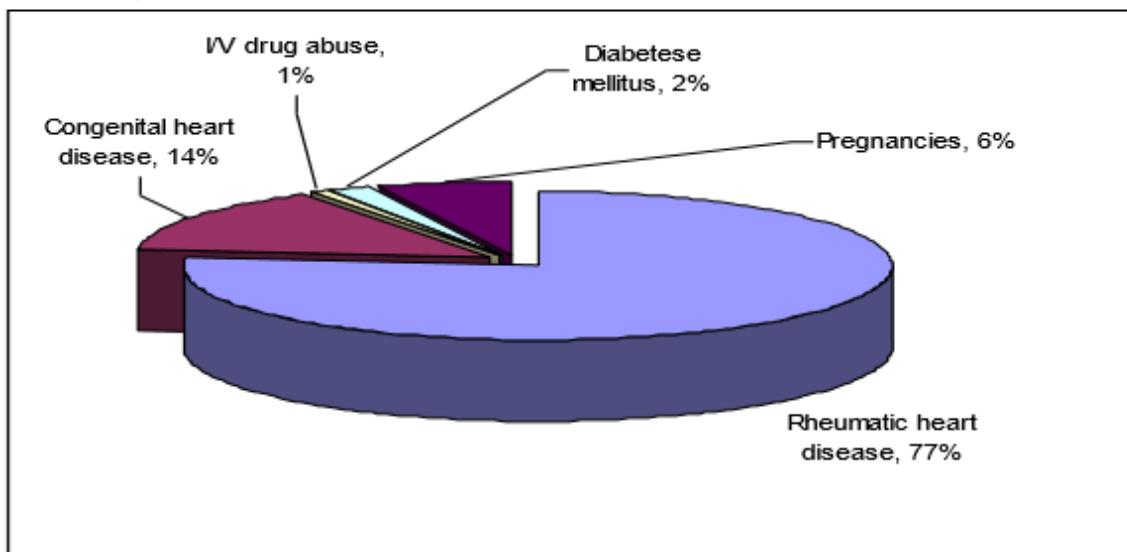
Table 1: Frequency of presenting clinical features

Clinical Parameters	%age
Fever	87
Anorexia	44
Chills and sweats	56
Fatigue	33
Nausea	27
Weight loss	15
Headache	23
Arthralgias and myalgias	12

The mitral valve is the most frequently affected area (55%, n = 47) as shown in Figure 1.

Fig.1: Site of Endocardial Involvement

The majority of patients (77%, n = 66) had a rheumatic heart disease, such as pre-substance lesion, 1 (Fig. 2).

Fig.2: Prevalence of precursor lesions for Infective Endocarditis

Data on the frequency of various complications and systemic characteristics of the disease are presented in Table 2.

Table 2: Prevalence of complications

Parameter	%age	=n
Splenomegaly	32.5	28
Petechial rash	4.6	4
Osler's nodes	8.1	7
Janeway lesions	6.9	6
Splinter hemorrhage	10.5	9
Subconjunctival hemorrhage	12.8	11
Roth's spots	5.8	5
Cerebral embolism	19.8	17
Peripheral embolism	13.9	12

DISCUSSION:

Infective endocarditis is a rare disease, and it affects approximately 10,000 to 20,000 people in the United States every year. Infective endocarditis occurs in about one-third of patients and up to 65% of systemic emboli, which is related to the central nervous system, is the second most common cause of deaths after congestive heart failure in this patient population. The risk of embolism was reported to be particularly high during the first week after diagnosis. In our study, mitral valve was the most common site in infective endocarditis, whereas Netzer et al. In one study, it was reported that the aortic valve was the most affected part. The limitation of the study was that the prosthetic valve endocarditis was not a single-center study that was carried out in a training hospital in southern Punjab, so that the only case study was found during the period. In this part of the country, like rheumatic heart disease, rheumatic valve lesions were infectious endocarditis. In our study group, second most common precursor lesions were congenital heart diseases. Cerebral embolism was documented in 19.8% of patients, compared to that reported by Netzer et al. (9%).

CONCLUSION:

Most patients with infective endocarditis showed typical fever symptoms. Rheumatic heart disease was more frequent in our study than previously published data. The risk of embolic complications was also relatively high.

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