ORIGINAL ARTICLE

Clinical Profile of Patients Hospitalized for Infective Endocarditis

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ABSTRACT

Objective: To study the modes of presentation, precursor lesions, complications and other clinical parameters related to infective endocarditis.
Study design: Case series
Place and duration of study: The study was conducted in the department of Cardiology and in Medical unit 4 at Bahawal Victoria Hospital Bahawalpur from 1st April 2010 to 30th September 2012.
Methodology: The data was collected regarding the symptoms of the disease, its complications, predisposing factors and the site of involvement. All the patients with a possibility of infective endocarditis were subjected to trans-thoraccic echocardiography. Blood cultures were also sent. Data was analyzed using SPSS version 10.
Results: A total of 86 patients were enrolled. In the study population, fever was the most common clinical presentation (87%). Mitral valve was the most commonly affected site (55% of patients). Most of the patients (77%) were having rheumatic valvular heart disease as the precursor lesion.
Conclusion: Most of the patients presented with fever. The prevalence of rheumatic heart disease and embolic complications was much higher.
Keywords: Infective endocarditis, Rheumatic heart disease

INTRODUCTION

Endocarditis is a bacterial or fungal infection of the valvular or endocardial surface of the heart[1,11]. The prototypic lesion of infective endocarditis, the vegetation, is a mass of platelets, fibrin, micrcolonies of microorganisms, and scant inflammatory cells[2]. Infection most commonly involves heart valves (either native or prosthetic) but may also occur on the low pressure side of the ventricular septum at the site of a defect, on the mural endocardium where it is damaged by aberrant jets of blood or foreign bodies, or on intracardiac devices themselves[2]. Common organisms responsible usually include *Streptococcus viridins* group, *Enterococcus, Staphylococcus aureus* and *Streptococcus epidermis*[1-5]. Other organisms have been reported rarely and include anaerobic gram-negative bacilli, *Coxiella burnetti*, *Chalamydia, Candida, Aspergillus* and *Histoplasma*[4]. Group A Beta-haemolytic *Streptococcus* (GABS), *Streptococcus pyogens* is an uncommon cause of infective endocarditis[4]. Predisposing cardiac conditions are valvular disease, rheumatic fever, history of endocarditis, congenital heart disease and pacemaker wires[4]. Infective endocarditis (IE) is associated with a number of complications[6]. Peripheral systemic embolism is a common and serious complication of infective endocarditis linked to migration of vegetations[6,7]. Transthoracic echocardiography is economical, easily available and specific in diagnosing endocarditis[8,9]

Despite advances in medical, surgical and critical care interventions, infective endocarditis remains a disease that is associated with considerable morbidity and mortality.[4,10,12,13] Therefore timely diagnosis and appropriate management, medial or surgical, is necessary. For uncomplicated infective endocarditis medical management may be considered sufficient whereas guidelines, not backed by evidence from randomized trials, strongly recommend urgent surgery for patients with infective endocarditis and congestive heart failure due to valvular regurgitation[14,15].

METHODOLOGY

The study was conducted in the department of Cardiology and in Medical unit 4 at Bahawal Victoria Hospital Bahawalpur from 1st April 2010 to 30th September 2012. All patients with the diagnosis of infective endocarditis based upon the Duke's criteria[1,2,5] were enrolled in the study. The data was collected regarding the symptoms of the disease (fever, weight loss, anorexia, nausea, arthralgias or myalgias, headache, fatigue etc), its complications (petechiae, Osler nodes, Janeway lesions, Roth's spots, subconjunctival hemorrhage, splinter hemorrhages, splenomegaly, cerebral embolism etc), predisposing factors and the site of involvement. All

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the patients with a possibility of infective endocarditis were subjected to trans-thoracic echocardiography. Blood cultures were also sent. Patients with a strong suspicion of alternative diagnosis were excluded.

Duke's Criteria for Infective Endocarditis

Major Criteria

- Positive echocardiography
- Positive blood culture

Minor Criteria

- Predisposing conditions
- Fever > 37^0 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.

The data was analyzed using SPSS version 10. The frequencies and percentages of different clinical parameters were calculated.

RESULTS

During the study period, 86 patients were enrolled. In the study population, fever was the most common clinical presentation (87%), followed by anorexia, chills and sweats, fatigue, nausea and weight loss (Table 1). Mitral valve was the most commonly affected site (55%, n=47) as shown in Fig 1. Most of the patients (77%, n=66) were having rheumatic valvular heart disease as the precursor lesion (Fig 2). The data regarding the frequency of various complications and systemic features of the disease is given in Table 2.

Fig.1: Site of Endocardial Involvement

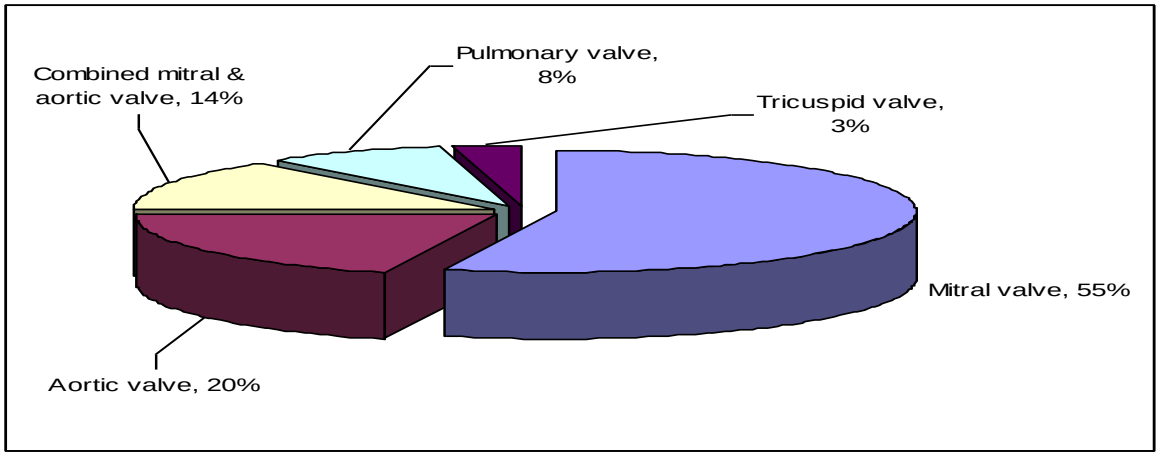

Fig.2: Prevalence of precursor lesions for Infective Endocarditis

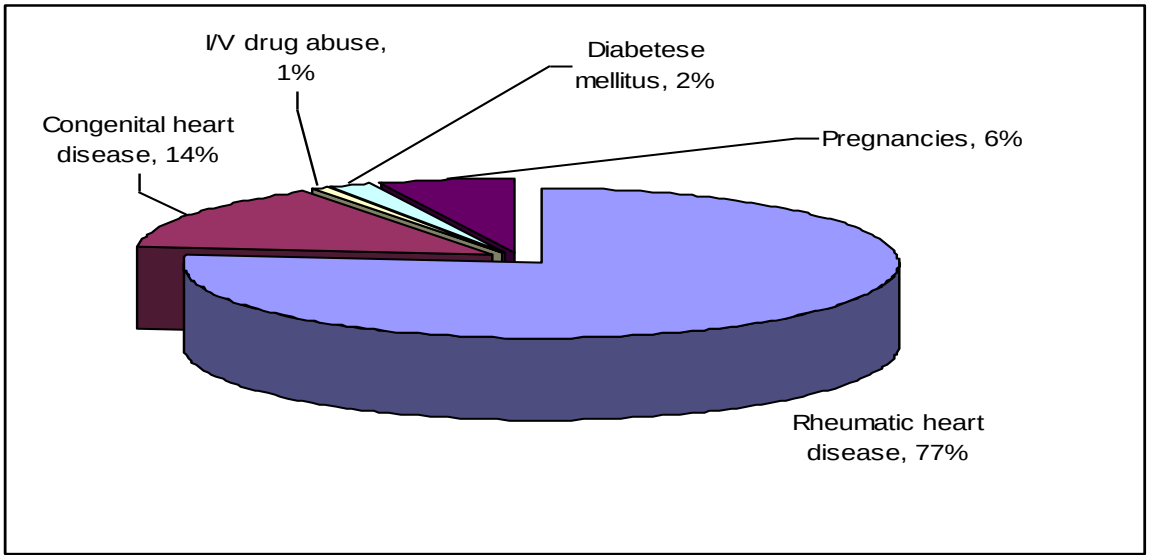

Table 1: Frequency of presenting clinical features

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

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 an uncommon, but not rare, disease affecting about 10,000 to 20,000 persons in the United States each year[16]. Systemic embolism, which occurs in approximately one third of patients with infective endocarditis and involves the central nervous system in up to 65%, is the second most common cause of death, after congestive heart failure, in this patient population[17]. The risk of embolism has been reported to be particularly high during the first week after diagnosis[18,19]. In our study, mitral valve was the most commonly involved site in infective endocarditis while a study by Netzer et al[20] reported aortic valve to be the most commonly affected part. The limitation of the study was that it was a single center study conducted at a teaching hospital in southern Punjab, so not even a single case of prosthetic valve endocarditis was encountered during the study period. As the rheumatic heart disease is prevalent in this part of the country, so rheumatic valvular lesions were the most common precursor lesions of infective endocarditis, congenital heart disease occupying the second place in our study population. Cerebral embolism was documented in 19.8% of the patients which was higher as compared to that reported by Netzer et al (9%)[20].

CONCLUSION

Most of the patients with infective endocarditis presented with typical symptoms of fever. Rheumatic heart disease was much more prevalent in our study as compared to earlier published data. Risk of embolic complications was also relatively high.

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