

## Original Research Article

## Infective Endocarditis in Patients with Congenital Heart Disease

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**Abstract:** IE in patients with CHD occurred in young patients. The IE is frequently right-sided. Although surgical treatment was required in many cases, mortality was low. It is important for patients with CHD to have preventive antibiotic prophylaxis for dental procedures.

**Keywords:** CHD, infective endocarditis, pathogens.

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## INTRODUCTION

Congenital heart disease (CHD) has become the leading risk factor for pediatric infective endocarditis (IE) in developed countries after the decline of rheumatic heart disease (Loureiro-Amigo, J. *et al.*, 2016). Advances in catheter- and surgery-based cardiac interventions have rendered almost all types of CHD amenable to complete correction or at least palliation. Patient survival has increased, and a new patient population, referred to as adult CHD (ACHD) patients, has emerged

The aim of this study was to describe the features of IE in patients with CHD treated in a reference centre.

## METHODS

A retrospective review was performed on a cohort of patients with CHD who presented with IE (defined by the modified Duke criteria) between 2014 and 2017 collected in the cardiology unit of the university hospital center Mohammed VI in Marrakech.

## RESULTS

IE was observed in 9 patients. The median age at diagnosis of IE was 20.7 years, and 66,6% were male. Comorbidity was low. The most frequent CHD were: patent arterial duct (44,4%), bicuspid aortic valve

(33%). In 88% cases, the patients had never consulted before. The CHD was revealed by the IE. Only eleven percent of patients had some type of prosthesis. The IE was detected in the right side of 55, 5% of the patients. Twenty two percent of patients developed aorta-pulmonary artery fistula. The most frequent etiological agents were streptococci, *Staphylococcus epidermidis*. Surgery was required to treat IE in 44% of patients. One patient died.

## DISCUSSION

The incidence of infective endocarditis (IE) in patients with congenital heart disease (CHD) is higher than in general population; this is a major problem considering the continuous expansion of such group of patients. Implanted prosthetic material paves the way for cardiovascular device-related infections, but studies on the management of CHD-associated IE in the era of cardiovascular devices are scarce.

The types of heart malformation (unrepaired, repaired, palliated) substantially differ in their lifetime risks for IE. Streptococci and staphylococci are the predominant pathogens. Right sided IE is more frequently seen in patients with CHD (Knirsch, W. *et al.*, 2019; Micheletti, A. *et al.*, 2010). Relevant comorbidity caused by cardiac and extracardiac episode-related complications is high.

Trans esophageal echocardiography is recommended for more precise visualization of vegetations, especially in complex type of CHD in ACHD patients. Antimicrobial therapy and surgical management of IE remain challenging, but outcome of CHD-associated IE from the neonate to the adult is better than in other forms of IE.

Prognosis is better than in other forms of IE with a mortality rate <10%. Primary prevention is crucial: a good oral-dental hygiene and regular dental review are as important as antibiotic prophylaxis; however this awareness in the CHD population is still not satisfactorily spread due to an educational problem.

## CONCLUSION

IE in patients with CHD occurred in young patients. The IE is frequently right-sided. Although surgical treatment was required in many cases, mortality was low. It is important for patients with CHD to have preventive antibiotic prophylaxis for dental procedures.

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