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Infective endocarditis in patients with congenital heart disease: Results of a nationwide study including 1494 endocarditis cases.

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BACKGROUND:
Infective endocarditis (IE) represents a major complication in patients with congenital heart disease (CHD) and is associated with high morbidity and mortality. The aim of this study was to analyse the frequency and outcome of IE in contemporary CHD patients based on all IE hospital admissions in Germany between 2011 and 2016.

METHODS:
Based on the German diagnosis related groups data of patients treated between 2011 and 2016, we identified all CHD patients with a diagnosis of IE. The data contains information on patient demographics, primary and secondary diagnoses, interventional or surgical procedures, duration of stay and outcome including mortality. The primary endpoint of the study was endocarditis-associated mortality as well as major adverse events (defined as death or myocardial infarction, stroke, pulmonary embolism, sepsis, resuscitation or intubation).

RESULTS:
Overall, 181,924 CHD patients were included in the analysis (55% male; 73% children, mean age 2.3 years; 27% adults, mean age 58.4 years; underlying heart defect of simple complexity 55%, moderate complexity 23% and complex heart defect 22%, respectively). During the study period 1494 cases were treated for IE corresponding to 0.82% of all inpatient treatment cases in CHD patients. Mortality rate was 6.6% (95% CI: 5.0-7.6%) with a major adverse events rate of 44.6% (95% CI: 41.3-48.2%). In total, 682 IE patients (45.7% CI: 42.3%-49-2%) required a surgical intervention. The relative risk of dying due to endocarditis in CHD patients was significantly lower compared to older IE patients without CHD (relative risk 0.39; 95% CI: 0.32-0.47).

CONCLUSIONS:
Infective endocarditis accounts for a minority of CHD related hospitalizations but remains a deadly disease with a high proportion of patients requiring surgical intervention. In addition, major adverse events are common in this setting, with almost half of the IE population presenting with a major adverse event. Due to different demographic and comorbidity spectrum encountered in CHD patients, these younger patients tend to have significantly better survival prospects compared to non-CHD IE patients in the current era.