Long-term clinical outcome after alcohol septal ablation for obstructive hypertrophic cardiomyopathy: results from the Euro-ASA registry.

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Abstract

**AIMS:** The first cases of alcohol septal ablation (ASA) for obstructive hypertrophic cardiomyopathy (HCM) were published two decades ago. Although the outcomes of single-centre and national ASA registries have been published, the long-term survival and clinical outcome of the procedure are still debated.

**METHODS AND RESULTS:** We report long-term outcomes from the as yet largest multinational ASA registry (the Euro-ASA registry). A total of 1275 (58 ± 14 years, median follow-up 5.7 years) highly symptomatic patients treated with ASA were included. The 30-day post-ASA mortality was 1%. Overall, 171 (13%)
patients died during follow-up, corresponding to a post-ASA all-cause mortality rate of 2.42 deaths per 100 patient-years. Survival rates at 1, 5, and 10 years after ASA were 98% (95% CI 96–98%), 89% (95% CI 87–91%), and 77% (95% CI 73–80%), respectively. In multivariable analysis, independent predictors of all-cause mortality were age at ASA (P < 0.01), septum thickness before ASA (P < 0.01), NYHA class before ASA (P = 0.047), and the left ventricular (LV) outflow tract gradient at the last clinical check-up (P = 0.048). Alcohol septal ablation reduced the LV outflow tract gradient from 67 ± 36 to 16 ± 21 mmHg (P < 0.01) and NYHA class from 2.9 ± 0.5 to 1.6 ± 0.7 (P < 0.01). At the last check-up, 89% of patients reported dyspnoea of NYHA class ≤2, which was independently associated with LV outflow tract gradient (P < 0.01).

CONCLUSIONS: The Euro-ASA registry demonstrated low peri-procedural and long-term mortality after ASA. This intervention provided durable relief of symptoms and a reduction of LV outflow tract obstruction in selected and highly symptomatic patients with obstructive HCM. As the post-procedural obstruction seems to be associated with both worse functional status and prognosis, optimal therapy should be focused on the elimination of LV outflow tract gradient.


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Abstract
Hypertrophic cardiomyopathy (HCM) is defined by the presence of increased ventricular wall thickness or mass in the absence of abnormal loading conditions (hypertension, valve disease) sufficient to cause the observed abnormality [1,2]. Most HCM patients are asymptomatic or mildly symptomatic, but some develop symptoms such as palpitations, dyspnoea, angina or syncope [3]. An infrequent presentation of the disease is sudden cardiac death (SCD), with an annual incidence of approximately 1%.


Risk and Causes of Death in Patients After Alcohol Septal Ablation for Hypertrophic Obstructive Cardiomyopathy.


Abstract

BACKGROUND: Because the final myocardial scar might be theoretically associated with an increased risk of sudden cardiac death, the long-term clinical course of patients who undergo alcohol septal ablation (ASA) is still a matter of debate. In this retrospective multicentre study, we report outcomes after ASA, including survival, analysis of causes of deaths, and association between time and cause of death.

METHODS: We enrolled 366 consecutive patients (58 ± 12 years, 54% women) who were treated using ASA and followed-up for 5.1 ± 4.5 years.

RESULTS: The in-hospital and 30-day mortality were 0.5% and 0.8%, respectively; the ASA-related morbidity was < 20%. Overall, 52 patients died during 1867 patient-years, which means the all-cause mortality rate was 2.8% per year. The mortality rates of sudden death and sudden death with an appropriate implantable cardioverter-defibrillator (ICD) discharge were 0.4% and 1% per year, respectively. Patients with sudden death or appropriate ICD discharge experienced these mortality events at younger age than patients who died of other hypertrophic obstructive cardiomyopathy-related causes (60.8 years [range, 52–71.5 years] vs 72.4 years [range, 64.2–75.2 years]; P = 0.048). A total of 292 patients (80%) had an outflow gradient ≤ 30 mm Hg, and 327 patients (89%)
were in New York Heart Association class ≤ II at the last clinical check-up.

**CONCLUSIONS:** ASA had low procedure-related mortality, with subsequent 1% occurrence of sudden mortality events per year and 2.8% mortality rate per year in the long-term follow-up. Patients with sudden death or ICD discharge experienced the mortality events approximately 1 decade earlier than patients who died from other causes not related to hypertrophic cardiomyopathy.


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