

## University of Groningen

### Alcohol septal ablation

Liebregts, Max

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# Outline of the Thesis



Hypertrophic cardiomyopathy (HCM) is the most common inheritable cardiac disease present in 1 in 500 of the general population. Approximately two thirds of HCM patients have a significant gradient over the left ventricular outflow tract (LVOT) at rest or during physiological provocation, and are classified as having *obstructive* HCM. First line treatment in patients with significant LVOT obstruction is with negative inotropic drugs (beta-blockers, verapamil, and disopyramide). In the 5-10% of patients who stay highly symptomatic despite optimal medical therapy, septal reduction therapy is indicated, either by surgical myectomy or alcohol septal ablation (ASA). ASA was introduced as a percutaneous alternative to surgical myectomy by Ulrich Sigwart in 1995. **CHAPTER 2** serves as an introduction to the thesis as a whole, and to PARTS II & III in particular.

Since its introduction over 20 years ago there has been a polarizing debate concerning the role of ASA in the management of obstructive HCM. In **PART II** we compare ASA and myectomy head-to-head. First in an international multicenter study focussing on long-term outcomes (**CHAPTER 3**), and second by means of a systematic review and meta-analysis (**CHAPTER 4**).

**PART III** considers ways to improved outcomes of ASA. In the early days of ASA, relatively high volumes of alcohol were used. The first 3 cases described by Sigwart were treated with an average of 4.5 mL, for example. In **CHAPTER 5** we evaluate the effect of alcohol dosage on clinical outcomes following ASA. In **CHAPTER 6** we set out to identify predictors of outcome following ASA by means of the largest ASA-registry to date (Euro-ASA registry).

The American College of Cardiology Foundation/American Heart Association guidelines reserve ASA for elderly patients and patients with serious comorbidities. **PART IV** investigates if the indication for ASA can be broadened to younger patients. **CHAPTERS 7** compares outcomes of young and elderly patients who underwent ASA for obstructive HCM to age-matched non obstructive HCM patients. In respons to the accompanying editorial by Eleid and Nishimura, **CHAPTER 8** also reports on age-specific outcomes following ASA, but in a much larger cohort.

**PART V** considers primary prevention of sudden cardiac death (SCD) in patients undergoing ASA. In 2014 the European Society of Cardiology guidelines commended a novel clinical risk prediction model for SCD in HCM. This HCM Risk-SCD model has not been validated in patients with obstructive HCM before or after septal reduction therapy, and application of the model in these patients is therefore not recommended. In **CHAPTER 9** we provide the first validation of the new model in HCM patients undergoing ASA.