

**Appendix 3 (as supplied by the authors):** Management options for left ventricular outflow tract obstruction

CLINICAL PRESENTATION	THERAPY	LEVEL OF EVIDENCE
Asymptomatic		Expert opinion; Septal reduction therapy is not recommended in truly asymptomatic patients no matter how severe the obstruction. <sup>1,2</sup>
Symptomatic	Beta Blocker	Mainly uncontrolled small trials and cohort studies <sup>3,4</sup>
	Verapamil	One small randomized-controlled trial; Observational cohort data <sup>5-7</sup>
	BB & Verapamil, Combined	No current data to support
	Disopyramide	Mainly observational data with limited controls and no placebo <sup>8-10</sup>
	PPM	3 RCTs indicate general lack of efficacy, with improvement seen in observational studies mainly the result of placebo effect. Possible utility in elderly patients refractory to maximal medical therapy <sup>11-13</sup>
	ASA	No prospective controlled data, lack of complete follow-up, variable technique, shorter follow up periods compared with myectomy <sup>14-24</sup>
	Myectomy	No prospective controlled data, lack of complete follow-up, variable technique, longer follow up periods compared with ASA <sup>25-30</sup>
	ASA vs Myectomy	No prospective data. Isolated retrospective cohort data suggest equivalency in early outcomes <sup>31-33</sup>

**References:**

1. Maron BJ, McKenna WJ, Danielson GK, et al. American College of Cardiology/European Society of Cardiology clinical expert consensus document on hypertrophic cardiomyopathy. *J Am Coll Cardiol* 2003;42:1687-713.
2. Gersh BJ, Maron BJ, Bonow RO, et al. ACCF/AHA guideline for the diagnosis and treatment of hypertrophic cardiomyopathy. *J Am Coll Cardiol* 2011;58:e212-60.
3. Dearani JA, Ommen SR, Gersh BJ, et al. Surgery insight: septal myectomy for obstructive hypertrophic cardiomyopathy — the Mayo Clinic experience. *Nat Clin Pract Cardiovasc Med* 2007;4:503-12.
4. Elliott PM, Gimeno Blanes JR, Mahon NG, et al. Relation between severity of left-ventricular hypertrophy and prognosis in patients with hypertrophic cardiomyopathy. *Lancet* 2001;357:420-4.

5. Elliott PM, Poloniecki J, Dickie S, et al. Sudden death in hypertrophic cardiomyopathy: identification of high risk patients. *J Am Coll Cardiol* 2000;36:2212-8.
6. Fernandes VL, Nielsen C, Nagueh SF, et al. Follow-up of alcohol septal ablation for symptomatic hypertrophic obstructive cardiomyopathy the Baylor and Medical University of South Carolina experience 1996 to 2007. *JACC Cardiovasc Interv* 2008;1:561-70.
7. Fishman GI, Chugh SS, DiMarco JP, et al. Sudden cardiac death prediction and prevention: report from a national heart, lung, and blood institute and heart rhythm society workshop. *Circulation* 2010;122:2335-48.
8. Kuhn H, Lawrenz T, Lieder F, et al. Survival after transcatheter ablation of septal hypertrophy in hypertrophic obstructive cardiomyopathy (TASH): a 10 year experience. *Clin Res Cardiol* 2008;97:234-43.
9. Lisboa LAF, Dallon LAO, Pomerantzeff PMA, et al. Long term results of septal myectomy in the treatment of obstructive hypertrophic cardiomyopathy. *Rev Bras Cir Cardiovasc* 2011;26:86-92.
10. Welge D, Seggewiss H, Fassbender D, et al. Langzeitverlauf nach perkutaner septumablation bei hypertropher obstruktiver kardiomyopathie. *Dtsch Med Wochenschr* [article in German]. 2008;133:1949-54.
11. Shah JS, Esteban MTT, Thaman R, et al. Prevalence of exercise-induced left ventricular outflow tract obstruction in symptomatic patients with non-obstructive hypertrophic cardiomyopathy. *Heart* 2008;94:1288-94.
12. Sorajja P, Nishimura RA, Gersh BJ, et al. Outcome of mildly symptomatic or asymptomatic obstructive hypertrophic cardiomyopathy. *J Am Coll Cardiol* 2009;54:234-41.
13. Jacoby D, McKenna WJ. Support for routine use of metabolic stress testing in hypertrophic cardiomyopathy. *Am J Cardiol* 2012;109:1534-5.
14. Sorajja P, Allison T, Hayes C, et al. Prognostic utility of metabolic exercise testing in minimally symptomatic patients with obstructive hypertrophic cardiomyopathy. *Am J Cardiol* 2012;109:1494-8.
15. Elliott P, McKenna W. Hypertrophic cardiomyopathy. *Lancet* 2004;363:1881-91.
16. Alam M, Dokainish H, Lakkis NM. Hypertrophic obstructive cardiomyopathy-alcohol septal ablation vs. myectomy: a meta-analysis. *Eur Heart J* 2009;30:1080-7.
17. Qin JX, Shiota T, Lever HM, et al. Outcome of patients with hypertrophic obstructive cardiomyopathy after percutaneous transluminal septal myocardial ablation and septal myectomy surgery. *J Am Coll Cardiol* 2001;38:1994-2000.
18. Seggewiss H, Rigopoulos A, Welge D, et al. Long-term follow-up after percutaneous septal ablation in hypertrophic obstructive cardiomyopathy. *Clin Res Cardiol* 2007;96:856-63.
19. Linde C, Gadler F, Kappenberger L, et al. Placebo effect of pacemaker implantation in obstructive hypertrophic cardiomyopathy. *Am J Cardiol* 1999;83:903-7.

20. Rogers DP, Marazia S, Chow AW, et al. Effect of biventricular pacing on symptoms and cardiac remodelling in patients with end-stage hypertrophic cardiomyopathy. *Eur J Heart Fail* 2008;10:507-13.
21. Maron MS, Olivotto I, Harrigan C, et al. Mitral valve abnormalities identified by cardiovascular magnetic resonance represent a primary phenotypic expression of hypertrophic cardiomyopathy. *Circulation* 2011;124:40-7.
22. Yu EH, Omran AS, Wigle ED, et al. Mitral regurgitation in hypertrophic obstructive cardiomyopathy: relationship to obstruction and relief with myectomy. *J Am Coll Cardiol* 2000;36:2219-25.
23. Fuster V, Ryden LE, Cannom DS, et al. 2011 ACCF/AHA/HRS focused updates incorporated into the ACC/AHA/ESC 2006 Guidelines for the management of patients with atrial fibrillation. *J Am Coll Cardiol* 2011;57:e101-98.
24. Bos JM, Maron BJ, Ackerman MJ, et al. Role of family history of sudden death in risk stratification and prevention of sudden death with implantable defibrillators in hypertrophic cardiomyopathy. *Am J Cardiol* 2010;106:1481-6.
25. McKenna W, Deanfield J, Faruqi A, et al. Prognosis in hypertrophic cardiomyopathy: role of age and clinical, electrocardiographic and hemodynamic features. *Am J Cardiol* 1981;47:532-8.
26. Maron BJ, Savage DD, Wolfson JK, et al. Prognostic significance of 24 hour ambulatory electrocardiographic monitoring in patients with hypertrophic cardiomyopathy: a prospective study. *Am J Cardiol* 1981;48:252-7.
27. Sadoul N, Prasad K, Elliott PM, et al. Prospective prognostic assessment of blood pressure response during exercise in patients with hypertrophic cardiomyopathy. *Circulation* 1997;96:2987-91.
28. Elliott PM, Sharma S, Varnava A, et al. Survival after cardiac arrest or sustained ventricular tachycardia in patients with hypertrophic cardiomyopathy. *J Am Coll Cardiol* 1999;33:1596-601.
29. Monserrat L, Elliott PM, Gimeno JR, et al. Non-sustained ventricular tachycardia in hypertrophic cardiomyopathy. *J Am Coll Cardiol* 2003;42:873-9.
30. Elliott PM, Gimeno JR, Tome MT, et al. Left ventricular outflow tract obstruction and sudden death risk in patients with hypertrophic cardiomyopathy. *Eur Heart J* 2006;27:1933-41.
30. Maron BJ, Spirito P, Shen WK, et al. Implantable cardioverter-defibrillators and prevention of sudden cardiac death in hypertrophic cardiomyopathy. *JAMA* 2007;298:405-12.
32. Adabag AS, Maron BJ, Appelbaum E, et al. Occurrence and frequency of arrhythmias in hypertrophic cardiomyopathy in relation to delayed enhancement on cardiovascular magnetic resonance. *J Am Coll Cardiol* 2008;51:1369-74.