MSD MANUAL
Professional Version

Vasospastic Angina

(Prinzmetal Angina; Variant Angina)

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Vasospastic angina is angina pectoris secondary to epicardial coronary artery spasm. Symptoms include angina at rest and rarely with exertion. Diagnosis is by electrocardiography (ECG) and provocative testing with ergonovine or acetylcholine. Treatment is with calcium channel blockers and sublingual nitroglycerin.

Symptoms and Signs | **Diagnosis** | **Treatment**

(See also Overview of Coronary Artery Disease.)

Many patients with vasospastic angina also have significant fixed obstruction of at least one major coronary artery. Patients with mild or no fixed obstructions have better long-term outcomes than patients with associated severe fixed obstructions.

Symptoms and Signs of Vasospastic Angina

Symptoms are anginal discomfort occurring mainly during rest, often at night, and only rarely and inconsistently during exertion (unless significant coronary artery obstruction is also present). Attacks tend to occur regularly at certain times of day.

Diagnosis of Vasospastic Angina

- Provocative testing with ergonovine or acetylcholine during angiography

Diagnosis of vasospastic angina is suspected if ST-segment elevation occurs during an attack. Between anginal attacks, the ECG may be normal or show a stable abnormal pattern.

Confirmation is by provocative testing with ergonovine or acetylcholine, which may precipitate coronary artery spasm. Coronary artery spasm is identified by finding significant ST-segment elevation on ECG or by observation of a reversible spasm during cardiac catheterization. Testing is done most commonly in a cardiac catheterization laboratory.

Treatment of Vasospastic Angina

- Calcium channel blockers
- Sublingual nitroglycerin

Usually, sublingual nitroglycerin promptly relieves vasospastic angina. Calcium channel blockers may effectively prevent symptoms. Theoretically, beta-blockers (other than labetalol and carvedilol) may exacerbate spasm by allowing unopposed alpha-adrenergic vasoconstriction, but this effect has not been proven clinically.

Oral medications most commonly used are calcium channel blockers:

- Sustained-release diltiazem
- Sustained-release verapamil
- Amlodipine

Although all these medications relieve symptoms, they do not appear to alter prognosis. Average survival at 5 years is approximately 95% (if obstruction is absent or present in only one vessel), but mortality risk is greater for patients with both vasospastic angina and atherosclerotic coronary artery obstruction (1, 2). Risk increases with increasing obstruction.

Treatment references

1. Beltrame JF. Management of vasospastic angina. *Heart* 2022;109(1):70-77. Published 2022 Dec 13. doi:10.1136/heartjnl-2022-321268
2. Walling A, Waters DD, Miller DD, Roy D, Pelletier GB, Théroux P. Long-term prognosis of patients with variant angina. *Circulation* 1987;76(5):990-997. doi:10.1161/01.cir.76.5.990