

1. Medical Management

Most of them receive aspirin and statins to reduce Lipids (cholesterol) for life long, along with other drugs which will be decided by physician / cardiologist.

2. Coronary angioplasty (PTCA)

Here the significant atheromatous (block) lesion is tackled by passing a wire across the lesion, ballooning it to open up the artery and deploy a metal tube (stent) across it, so that the lesion is opened fully and blood flow restored.



a. What is a stent?

A stent is slotted metal tube with laser cut to make it more trackable, taking the shape of the artery and holding the block to the wall so that the lumen fully opened for blood flow.

b. Is 'stent' a must during PTCA?

Yes, > 90 % a PTCA procedure needs 'stent' to open up the artery.

c. What are different types of stents available now?

There are mainly 2 types of stents

- ✧ Bare Metal Stent (BMS)
- ✧ Drug Eluting Stents (DES)
- ✧ Bioabsorbable Vascular Scaffold (BVS)

d. What is the difference between BMS & DES ?

BMS can be of two varieties

- ✧ Stainless steel stent
- ✧ Cobalt chromium stent

They have no coated drug.

DES has drug coated inside the metal stents. These drugs are usually antiproliferative in nature which prevents cell growth

after stent deployment.
BMS came to clinical usage from 1991 and DES from 2002 onwards.

Newer type of "stent", available in India now, which helps in preventing restenosis as well as disappears by the end of 2 years. Its advantage is no metal and maintain vasomotion of the artery as before. However they are expensive (about Rs 2.5 lakhs per stent).

Chance of restenosis (Reblockage) within the stent usually within 6 months is about :

15 - 20 % for BMS - Stainless steel stents
10 - 15 % for BMS - Cobalt chromium stents
< 5 % for DES - Cobalt chromium stents

However, re stenosis is slightly higher % in those with diabetes.

Hence strict control of diabetes, good control of blood pressure, daily exercise and healthy diet along with the medications prescribed helps in reducing the incidence of restenosis.

3. CABG (Bypass surgery)

Where conduits are used to bypass the existing blocks in order to increase the blood flow Conduits:

Arterial - left internal mammary artery / radial artery

Venous - veins from legs

Advantages

- ✦ Cost effective
- ✦ Multiple, longish blocks which are not suitable for PTCA can be bypassed
- ✦ Small sized arteries (<2.5mm diameter) can be bypassed where stents do not exist at present.
- ✦ Mammary grafts are long lasting
- ✦ Diabetic with low pumping of heart have advantage with CABG than PTCA unless multiple DES are used.
- ✦ Those require valve replacement along with bypass are ideal for CABG + valve replacements.

Disadvantages

- ✦ Under general anesthesia.
- ✦ Open chest surgery with permanent scar.
- ✦ More risky than PTCA in selected group
- ✦ Can't undergo in acute situations (like myocardial infarction) and cardiogenic shock.

- ✧ Very elderly with bad lungs or co-morbid conditions (debilitating diseases) are not ideal for CABG.
- ✧ Chance of re-blockages, mainly in venous conduits (>50 % of them block within 5 years after CABG).
- ✧ Native vessels become atretic after bypass surgery.

What are the advantages / disadvantages of PTCA over CABG (surgery) :

Advantages :

- ✧ Done under local anaesthesia
- ✧ No scar
- ✧ Shorter stay in hospital (about 3 days)
- ✧ Early recovery and go back to work
- ✧ Less invasive in nature
- ✧ Fewer complications, if any

Disadvantages

- ✧ Procedure costly, if multiple stents / DES needed
- ✧ Restenosis in 5–20 % of patients usually within 6 months.