Valve lesions

## Aim:

To give you a grasp of the important valve lesions, identify severity and how to manage a safe anaesthetic.

## What is common?

Aortic stenosis (AS) and mitral regurgitation (MR)

## What is deadly?

AS, mitral stenosis (MS), hypertrophic obstructive cardiomyopathy (HOCM)

## What preparation?

The usual setup for anaesthesia and

Arterial monitoring

Metaraminol, ephedrine (and adrenaline)

Echo to assess cardiac output and valve function in real time

Defibrillation pads depending on severity

## Severity memory aid (from the ACC AHA guidelines)

|  |  |  |
| --- | --- | --- |
| **AS** | **Valve area = 2.5-3.5cm2** | **Pressure gradient mmHg** |
|  Mild | >1.5 | <25 |
|  Mod | 1-1.5 | 25-40 |
|  Severe | <1 | >40 |
| **MS** | **4-6cm2** |  |
|  Mild | >1.5 | <5 |
|  Mod | 1-1.5 | 5-10 |
|  Severe | <1 | >10 |
| AR |  |  |
|  Mild | <30% | <0.1 |
|  Mod |  |  |
|  Severe | >50% | >0.3 |
| MR |  |  |
|  Mild | <30% | Small central jet 4cm2 |
|  Mod |  |  |
|  Severe | >50% | Large central jet 8cm2Any wall impinging jet |

## Haemodynamic goals

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Preload** | **Rate** | **Rhythm** | **Contractility** | **Afterload** |  |
| **AS** | Full | Slow | SR important | Maintain important | High | Slow sinus squeeze |
| **MS** | Normal Avoid APO | Normal | SR important | Normal | High | Slow sinus squeeze |
| **AR** | Full | Fast | AF well tolerated | Normal | low | Full fast forward |
| **MR** | Full | Fast  | AF well tolerated | Normal | Low | Full fast forward |
| **HOCM** | Full  | Slow | SR | Decrease  | High |  |
| **Tamponade** | Full | fast | SR | Increase  | high | Adrenaline |