Anaesthetists' stress test: Pulmonary arterial hypertension (PAH) in pregnancy

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Background:

- Advanced management of PAH resulted in a higher number of women with PAH deciding to have a family.
- Poor prognosis for pregnant patients with PAH together with high maternal mortality rates still remain.
- According to ESC/ERS guidelines, pregnancy is not recommended in women with PAH.
- **NO** guidelines for the management of pregnant women with PAH in terms of anaesthesia do exist.

Case reports:

1. A 40-year-old G2P1 at 38th week of gestation presented at the ED with a complaint of dyspnea at rest. She reported a known asymptomatic MV prolapse and a newly diagnosed mild bronchial asthma. TTE showed an estimated PASP = 70mmHg. An emergency C-section was decided due to obstetrical reasons under low dose spinal anaesthesia at L4-L5 space [Dose:1.6ml of 0.5% Chirocaine + 25µg of FNT + 0.4ml of 35% Dextrose.]. Level of anaesthesia–T6. Immediately after delivery the mother developed PEA. Death was confirmed after 90 minutes of unsuccessful ALS.
2. A 34-year-old G1P0 at 34th week of gestation was admitted to our high risk pregnancy unit due to IUGR of the baby and a current history of atrial septal defect, left to right shunt and an estimated PASP = 45-50mmHg. Elective C-section was performed successfully under epidural anaesthesia at L3-L4 space [Dose:14 ml of 0.75% Ropivacaine - in 3ml increments]. Level of anaesthesia–T6. Admission to the cardiac unit followed uneventfully.

➤ In both cases:

- 2 IV cannulas, a CVC and an arterial line were placed before any intervention.
- Monitoring included:
 - Haemodynamics: BP, HR, CO, SVR, SVV, CVP
 - ABGs
 - ❖ All kept in normal value ranges

Discussion:

- Pregnancy in PAH is difficult to deal with. Therapy has to be initiated as soon as possible. Close follow-up by a multidisciplinary team is mandatory.
- Severity of PAH and functional status of mother definitely affect the prognosis.
- The safest mode of delivery seems to be elective C-section during 32-36 week of gestation.
- Epidural or low-dose combined spinal epidural anaesthesia are preferable to general anaesthesia, always under meticulous monitoring.
- The main “**anaesthetic goals**” are:

Avoidance of:

- hypoxaemia, hypercapnia, acidosis
- marked reduction in systemic vascular resistance
- myocardial depression

Maintenance of:

- sinus rhythm
- right ventricular preload

Learning points:

- ☐ Early consultation, diagnosis and therapy are crucial in order to **optimize** patient's clinical status.
- ☐ Elective delivery should be performed under regional anaesthesia.
- ☐ Postpartum period poses the highest incidence of mortality.

References:

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