# Perioperative Pain Management in the Pregnant Patient undergoing non-obstetric surgery

Philip Barclay

Non-obstetric surgery occurs during 0.3% to 2.2% of pregnancies. When providing appropriate anaesthesia, the anaesthetist must consider techniques that are safe for both mother and child. Standard anaesthetic techniques may therefore have to be modified in view of pregnancy-induced changes in maternal physiology and the presence of the fetus.

**Maternal considerations**

Physiological changes to the respiratory system in pregnancy (decreased FRC, increased oxygen consumption and decreased buffering capacity) lead to the rapid development of hypoxaemia and acidosis. In the presence of subanaesthetic concentrations of analgesic and anaesthetic agents, unconsciousness may occur quickly and unexpectedly.

Cardiovascular system changes result in vena caval compression, requiring uterine displacement in any procedure after 18-20 weeks gestation. This also causes distension of the epidural venous plexus, increasing the likelihood of intravascular injection of local anaesthetic and enhancing the spread of both epidural and intrathecal drugs.

Pregnancy also enhances the response to peripheral neural blockade.

**Fetal considerations**

Teratogenicity

The risk of teratogenicity must be considered when any drug is administered to a pregnant woman, with a risk of major morphological abnormalities in early stages of embryological development and functional defects at later stages.

Maintenance of fetal wellbeing

Fetal oxygenation is dependent upon maternal oxygenation and therefore maintenance of maternal oxygen tension, oxygen-carrying capacity, oxygen affinity and uteroplacental perfusion are critical.

Fetal monitoring during surgery must also be considered.

**Postoperative analgesia**

Systemic or neuraxial opioids, paracetamol and regional anaesthetic blocks should be used to provide appropriate post-operative analgesia. Non-steroidal anti-inflammatory drugs should be used with caution and avoided in the third trimester.