

Hypertension and Anesthesia

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Hypertension and Anesthesia

Raised arterial BP; defined and graded by the British Hypertension Society, European Society of Hypertension, and World Health Organization as follows:

- grade 1 (mild): systolic 140–159 mmHg; diastolic 90–99 mmHg.
- grade 2 (moderate): systolic 160–179 mmHg; diastolic 100–109 mmHg.
- grade 3 (severe): systolic \geq 180 mmHg; diastolic \geq 110 mmHg.

In 5% of cases, hypertension is secondary to:

- a) adrenal disorders, e.g. hyperaldosteronism, Cushing's syndrome, pheochromocytoma.
- b) unilateral or bilateral renal disease, e.g. renal artery stenosis, infection, reflux, glomerulonephritis, congenital abnormalities, diabetes mellitus, connective tissue diseases, obstruction, and tumor.
- c) others: coarctation of the aorta, pre-eclampsia, drugs, e.g. corticosteroids, oral contraceptives.

In the remaining 95% of cases, hypertension is termed primary or 'essential', i.e. has no apparent cause. Associated with family history and obesity, possibly alcohol and salt intake, diet, and stress. Caffeine and smoking increase BP.

Hypertension during anesthesia may be due to(causes): "

1. inadequate anesthesia/analgesia.
2. tracheal intubation/extubation.
3. inadequate paralysis.
4. underlying hypertensive disease.
5. aortic clamping.
6. hypercapnia, hypoxemia.
7. cerebral ischemia, CVA, raised ICP.

8. drugs, e.g. ketamine, adrenaline, cocaine.
9. rarely, malignant hyperthermia, phaeochromocytoma, thyroid crisis, and carcinoid syndrome.

Anesthesia for patients with hypertension:

▶ preoperatively:

- assessment for ischaemic heart disease, cardiac failure, cerebrovascular disease, and renal impairment.
- if not on treatment, surgery should be postponed unless it is an emergency. Patients with a diastolic pressure above 110 mmHg should be investigated and hypertension treated before anesthesia and surgery since morbidity and mortality are greater if untreated. Antihypertensive drugs are continued up to the morning of surgery.
- sedative premedication is often advocated to reduce endogenous catecholamine levels.

▶ intraoperatively:

- induction and maintenance as for ischaemic heart disease. Swings in BP are more likely because of arteriolar hypertrophy; e.g. hypotension on induction and hypertension on intubation.
- marked cardiovascular instability may accompany spinal/epidural anesthesia if hypertension is uncontrolled.

▶ postoperatively:

- adequate analgesia is particularly important.
- treatment of persistent hypertension may be required.

