Self-assessment questions

Cardio-respiratory effects of change of body position – Allan J. McIntyre B SC MD FRCP(C)
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A. SELECT THE SINGLE CORRECT ANSWER

- 1 During a neurosurgical procedure for clipping of an aneurysm of the anterior communicating artery the patient's head is elevated such that the aneurysm is 25 cm vertically above the mid-thorax. A mean systemic arterial blood pressure of 90 mmHg at the mid-thorax corresponds to what mean blood pressure at the aneurysm?
 - A 50 mmHg
 - B 60 mmHg
 - C 70 mmHg
 - D 80 mmHg
 - E 90 mmHg
- 2 Circulatory effects of changing from the supine to the erect position in unanaesthetised man include all the following except:
 - A An increase in systemic vascular resistance
 - B A decrease in parasympathetic tone
 - C A decrease in cardiac filling pressures
 - D A decrease in mean systemic arterial blood pressure
 - E A decrease in cerebral blood flow
- 3 True statements concerning the sitting position include all the following except:
 - A The sitting position is equivalent to a tilt of greater than 60°
 - B Cerebral blood flow is decreased in the sitting position
 - C The haemodynamic changes persist for only a few minutes after assuming the sitting position
 - D Leg bandaging and volume loading minimise extreme responses to the sitting position
 - E The anaesthesia technique may alter the response to assuming the sitting position
- 4 True statements concerning the Trendelenburg position include all the following except:
 - A This position is useful in the management of most types of shock
 - B At tilts greater than 35° right atrial filling pressure may decrease
 - C Cerebral blood flow is decreased
 - D Cardiac output decreases at tilts greater than 35°
 - E Leg elevation in supine patients increases venous return and is preferable to use of extreme head-down tilts (>35°)

B. FOR EACH QUESTION ONE OR MORE OF THE COMPLETIONS IS CORRECT, ANSWER AS FOLLOWS:

- A If only 1, 2, and 3 are correct
 - B If only 1 and 3 are correct
 - C If only 2 and 4 are correct
 - D If only 4 is correct
 - E If all are correct
- 5 Approximately 20 to 30 per cent of patients have a probe patent foramen ovale. Manoeuvres which could increase the possibility of paradoxical right to left embolization of air include which of the following?
 - 1 Placing the patient in the Trendelenburg position
 - 2 Placing the patient in the sitting position
 - 3 Infusion of sodium nitroprusside to lower pulmonary vascular resistance
 - 4 Application of positive and expiratory pressure to the airway
 - 6 West's Zone I may be increased by:
 - 1 Cardiovascular shock
 - 2 Status asthmaticus
 - 3 Positive end expiratory pressure
 - 4 Controlled hypotension
 - 7 Regarding pulmonary ventilation and perfusion, which of the following statements is/are correct?
 - 1 Dependent lung zones receive more perfusion than non-dependent areas
 - 2 In anaesthetized patients with increased closing capacity, non-dependent lung regions are preferentially ventilated during controlled ventilation
 - 3 Large tidal volumes and positive end expiratory pressure may improve compliance of alveoli in dependent lung regions with the result that during controlled ventilation inspired gas is distributed preferentially to dependent lung zones
 - 4 A patient with unilateral pulmonary disease and breathing spontaneously should have improved gas exchange with the diseased lung dependent while in the lateral position

2 D
1 C
3 C
4 A
6 E
7 A

ANSWERS