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Patient perceptions of anaesthesia research priorities - a failed study

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Abstract

Professor Steven Shafer alerted conference delegates at a recent international meeting to the value of considering topics for future research in terms of what the most important questions are that remain to be solved¹. He quoted from an issue of Science magazine, in which the editors reported questions they thought pointed to the greatest current scientific knowledge gaps². Two of the top 25 related to anaesthesia in a broad sense: the biological basis of consciousness and how memories are stored and retrieved. Others have noted the relevance of asking patients what they considered research priorities to be^{3,4}. We designed a simple study to ask patients what topics they thought were the most important for future anaesthesia research.

Keywords

study, patient, failed, priorities, research, anaesthesia, perceptions

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Patient perceptions of anaesthesia research priorities – a failed study

Professor Steven Shafer alerted conference delegates at a recent international meeting to the value of considering topics for future research in terms of what the most important questions are that remain to be solved¹. He quoted from an issue of *Science* magazine, in which the editors reported questions they thought pointed to the greatest current scientific knowledge gaps². Two of the top 25 related to anaesthesia in a broad sense: the biological basis of consciousness and how memories are stored and retrieved. Others have noted the relevance of asking patients what they considered research priorities to be^{3,4}. We designed a simple study to ask patients what topics they thought were the most important for future anaesthesia research.

Unfortunately, we were unable to get the study off the ground. Why? Patients simply did not know enough about anaesthesia to be able to give an opinion. Based on previous work, we trialled the following question as our first attempt⁵: 'If you had one million dollars that you could direct to research into anaesthesia to make it better, what aspects of anaesthesia would you like the money to be spent on?' Most patients fell silent. The best reply was "you all do a fantastic job, but the hospital needs more beds, so maybe you should focus on the present". After 5 to 10 patients with no more useful responses, we decided to change tack.

We prompted patients: we gave options such as the preoperative, intraoperative, or postoperative periods, sedation, analgesia, amnesia, doctor-patient interactions. Most of this patient group

merely nodded, parroted our comments or indicated general agreement. They still could not give a meaningful opinion. We were now starting to feel a little desperate, so added prompting from TV shows and movies. 'Star Trek' produced requests such as a teleporter or a scanning device giving instant healing without procedures. 'Dr Who' produced an equally useful device that you could point at people and make them sleep.

As our next step, we started by asking patients what they knew about anaesthetics. When this drew a blank, we asked if they watched any medical TV shows. We achieved our best responses using this technique, but even these were only an awareness of a room, a mask and a needle. One patient mentioned "something with beeping machines". Even patients who had undergone multiple operations did not demonstrate more comprehensive understanding. When delving into individual anaesthesia procedures, we found that endotracheal intubation had been portrayed in a variety of shows, usually in an emergency setting. However our patients did not realise that "something that traumatic" with a "metal thing in the mouth" would actually happen to them.

Patients appear to understand very little of what actually happens to them when anaesthetised. Anaesthesia is the 'black box' of medicine, even for patients who are frequent customers. We still think that patient input into the direction of future anaesthesia research is valid and relevant – if they understand what anaesthesia involves. The results from a comprehensive review of the involvement of consumers in a health service research agenda setting concluded that active involvement of patients with the investment of appropriate skills, time and resources were necessary to produce a worthwhile outcome⁶. Even in this small pilot study, television does appear to act as one source of information for patients – and TV is a very inaccurate portrayal of anaesthesia. Perhaps it's time for a new show? 'Tube and vent' instead of 'Nip/Tuck', or 'Magill's scope' instead of 'Grey's Anatomy'?

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Strategies for the withdrawal of extracorporeal membrane oxygenation for severe acute respiratory failure support: a new challenge?

We read with interest the experience of veno-venous extracorporeal membrane oxygenation (ECMO) support for patients with acute respiratory distress syndrome (ARDS) reported by the Australian and New Zealand Intensive Care Society in several publications¹⁻³. This experience illustrates the growing interest in ECMO for the management of ARDS, even if its role remains uncertain. Nowadays, clear formulations of indications for ECMO referral are proposed^{2,4}. Although the indications for ECMO support have become clearer in the last decade, the indications for withdrawal remain ill-defined. In clinical trials, ECMO is usually continued until recovery, with no specific criteria for withdrawal^{1,2,4}. We report a case of an unusually long duration of ECMO support which illustrates the difficulty in weaning.

A 57-year-old man was hospitalised for ARDS related to para-influenza virus type 3. After eight days of mechanical ventilation, and despite a prone position, blood gas showed pH 7.27, pCO₂ 83 mmHg, pO₂ 57 mmHg, HCO₃⁻ 37 mmol.l⁻¹ with FiO₂ 1 (P_aO₂/FiO₂ 57), Vt 4 ml/kg of predicted body weight, positive end-expiratory pressure 15 cmH₂O and mean plateau pressure of 39 cmH₂O. We initiated veno-venous ECMO support (Maquet Rotaflow®, Rastatt, Germany) and decreased the tidal volume to 2 ml/kg with positive end-expiratory pressure of 8 cmH₂O in order to obtain a mean plateau pressure below 30 cmH₂O. There was absolutely no clinical or blood gas improvement during the first six weeks. After 43 days of ECMO support, we observed a moderate improvement in lung compliance (0.09 ml/cmH₂O/kg). Unsurprisingly, the first weaning attempt of ECMO failed because of hypercapnic acidosis (pH 7.25, pCO₂ 70 mmHg, pO₂ 91 mmHg [P_aO₂/FiO₂ 121], HCO₃⁻ 30 mmol.l⁻¹ with FiO₂ 0.75, Vt 3.2 ml/kg, positive end-expiratory pressure 10 cmH₂O, mean plateau pressure of 39 cmH₂O, and with 0 l/minute of counter-current gas flow on ECMO setting). The fluid restriction was continued. We did not try lung recruitment

manoeuvres; however, right and left lateral body positions of the patient were rotated per two hours. The lung compliance was still very low (0.12 ml/cmH₂O/kg), but gradual improvement in oxygenation (P_aO₂/FiO₂ 139) led to withdrawal of ECMO support on the 53rd day. The patient was discharged after 83 days of hospitalisation. Written informed consent was obtained from the patient.

Significant technological advances allow long-duration veno-venous ECMO support for ARDS as illustrated here. Weaning can be challenging after several weeks of assistance and is a key issue in patient management. However, the criteria for ECMO withdrawal mentioned in publications are limited to 'lung recovery'. Lung management and weaning during ECMO deserves a lot of attention and many issues should be investigated (i.e. lung recruitment during ECMO, weaning to partial ventilator support, weaning from ECMO before the invasive mechanical ventilation). There is a need to improve our knowledge of both the indications for ECMO support and the criteria for its withdrawal. Consequently, further information regarding ECMO weaning is required.

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Long-term betel nut chewing is not a predictor of difficult tracheal intubation

Unanticipated difficult intubation is still one of the most serious crises in anaesthesia¹. Betel chewing is well recognised as being associated with the pathogenesis of oral submucous fibrosis