New Generation Pulse Oximetry in the Assessment of Peripheral Perfusion during General Anaesthesia - A Comparison between Propofol and Desflurane.

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Background

A pulse oximeter is a standard device for perioperative monitoring. It is well known that the early detection of tissue hypoxia is of great importance. It has been made easier due to a new generation pulse oximetry device from Masimo. This enables measurements of the peripheral perfusion index (PI) in real time. It has been found that volatile anaesthetics such as sevoflurane and desflurane increase the perfusion index. As we know, no data is available about perfusion index during propofol/remifentanil total intravenous anaesthesia.

Methods

ASA I and II class women scheduled for elective gynaecological surgery were eligible for the study. Patients were divided into two groups: group P receiving propofol/remifentanil intravenous anaesthesia and group D receiving desflurane/fentanyl general anaesthesia. PI was noted before anaesthesia, after remifentanil/fentanyl injection, after endotracheal intubation, at the beginning of surgery, during the procedure at ten minute intervals, at the end of the procedure, after awakening, after extubation and before discharge to the ward.

Results

Eighty-three patients were enrolled to the study. In both groups, PI increased significantly from the start to the end of surgery. There was a significant correlation between PI and end-tidal desflurane concentration ($r = 0.807$; $P = 0.001$). No correlation was found between propofol or remifentanil concentrations and PI.

Conclusion

Both intravenous propofol/remifentanil and desflurane/fentanyl general anaesthesia increase peripheral perfusion. An increase in end-tidal desflurane concentration raises peripheral perfusion.