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Room Upper 10

Accuracy of Portable Capnometer in Children

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Background: Monitoring of end-tidal carbon dioxide (etCO₂) by capnometer is necessary for maintain general anesthesia. To detect etCO₂ is important for airway and respiratory management especially in Children. In this study, we aimed to study the accuracy of portable capnometer, EMMA in children.

Method: A prospective observational trial was conducted. Thirteen children who underwent operation were selected. Children under general anesthesia were mechanical ventilated. ET_{CO}₂ was measured one point with EMMA (main stream) and GE (side stream). The airway adapter of EMMA for adult/ pediatric was connected. Bland-Altman plots were used to compare value of ET_{CO}₂ between 2 types of monitor.

Result: The patient median age is 18 months (range 1 month- 6 years) and median body weight is 8.7 kg (range 5-14.5 kg). Median tidal Volume is 77 ml (range 35- 160 ml). The dead space of airway adapter is 6 ml. ET_{CO}₂ value of EMMA is corresponding to value of GE. The 95 % limits of agreement is -1.27-2.49 (Figure 1). No any complications in this study.

Conclusion: The value of portable main stream type capnometer, EMMA has good correlation with sidestream type capnometer in children. EMMA may be useful for general anesthesia in out-of-operating room or in case of cardiopulmonary resuscitation, bedside respiratory care and patient transportation.

Figure

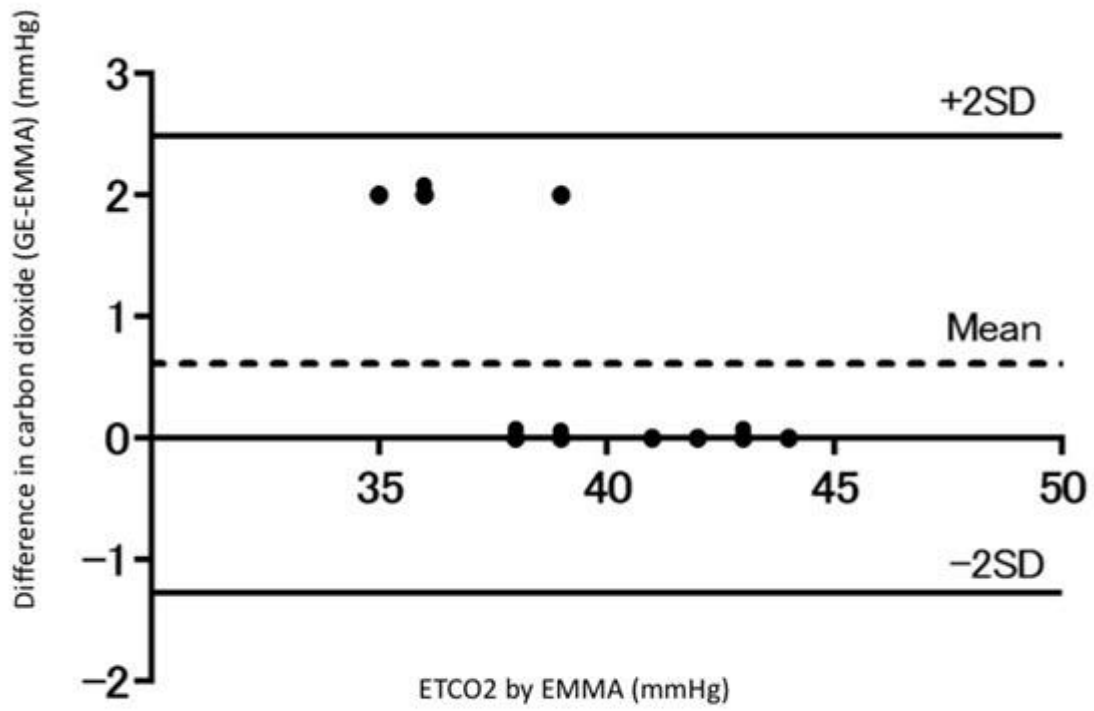


Figure 1. Bland Altman Plot

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