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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. ETCO2 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 ETCO2 between 2 types of monitor.

Result: The patient median age is 18 months (range1month- 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. ETCO2 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

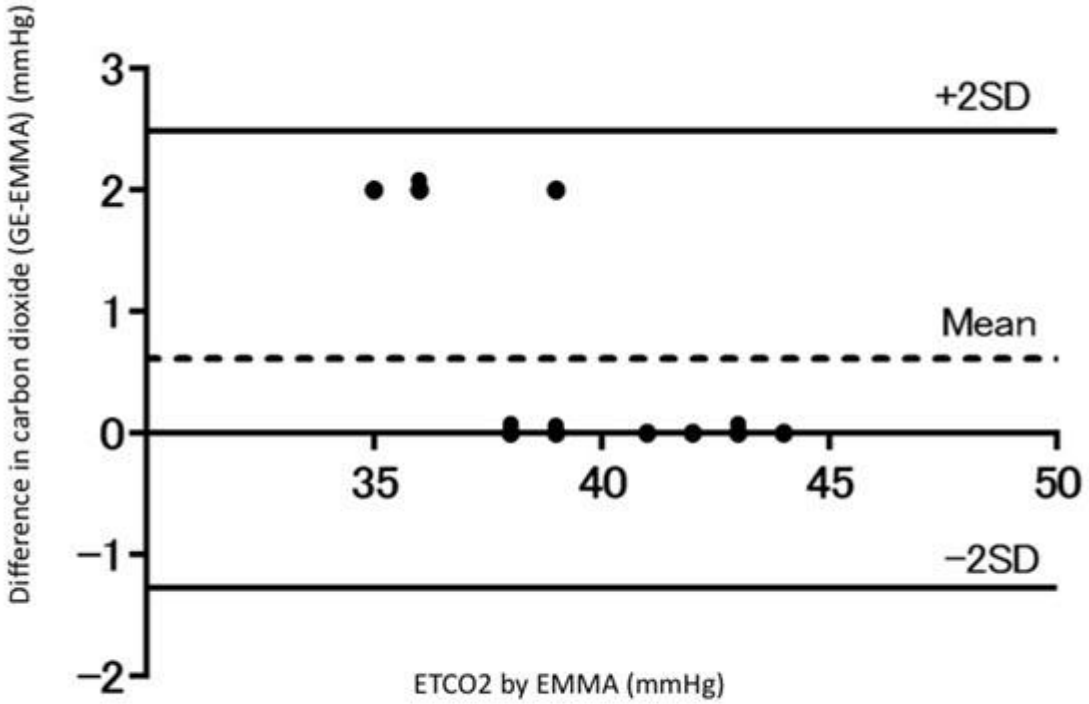

Figure 1. Bland Altman Plot

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