Pulse-Oximetric Measurement of Prilocaine-Induced Methemoglobinemia in Regional Anesthesia.

Soeding P., Deppe M., Gehring H. *Anesth Analg.* 2010 Oct;111(4):1065-8.

Background

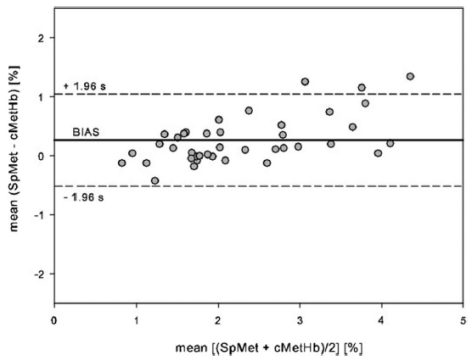
The Masimo Radical-7 is a new Pulse CO-Oximeter designed to measure methemoglobin. The device has not been evaluated in a clinical setting.

Methods

In this prospective observational study we compared the arterial methemoglobin levels and the corresponding pulse CO-Oximetric values of the Radical-7) in regional anesthesia with prilocaine.

Results

We analyzed 360 data pairs with methemoglobin values up to 6.6%. The mean bias and limits (± 1.96 sd) of the device were 0.27% (± 1.33%).



Bland and Altman analysis for repeated measurements: bias plot of the difference of pulse-oximeter estimate of methemoglobin (MetHb) (SpMet [%]) and cMetHb% versus the average of SpMet and cMetHb. Averaged data of the 9 repeated measurements. Lines show values of bias (mean of the differences)and +/- 1.96 SD. cMetHb% = CO-oximeter measurement of methemoglobin.

Conclusions

We found a high degree of agreement in measurement of methemoglobin between the 2 methods.