

Evaluation of Analytic and Motion-Resistant Performance of the Mindray 9006 Pulse Oximeter.

Peng L., Yan C., Lu H., Xia Y. *Med Sci Monit.* 2007 Aug;13(8):MT19-27.

Background

The Mindray 9006 is a newly developed pulse oximeter. The performance of noninvasive monitoring of arterial oxygen saturation by pulse oximetry (SpO₂) and pulse rate (PR) with the Mindray 9006 was evaluated.

Methods

Twenty healthy volunteers participated in this study. The Mindray 9006 was evaluated according to guidelines including HS3-A, EP5-A, and EP9-A2 published by the CLSI, and ISO 9919. A blinded side-by-side comparison of the Mindray 9006 and the Masimo MS-3 oximeter was also performed.

Results

The results demonstrated that the coefficients of variation (CV) of imprecision were less than 1% for SpO₂ and less than 5% for PR analyzed by the Mindray 9006. Comparisons of methods showed there was no significant difference in SpO₂/PR analysis between the Mindray 9006 with Rapidlab 855 CO-Oximeter or 812 Electrocardiogram (ECG) monitor ($p>0.05$) and between the Mindray 9006 and Masimo MS-3 ($p>0.05$). There was good correlation for SpO₂ between the Mindray 9006 and CO-Oximetry or the Masimo MS-3 ($r>0.96$) and for PR between the Mindray 9006 and ECG or the Masimo MS-3 ($r>0.98$). The accuracy as the root-mean-square (A_{RMS}) was less than 3% for both SpO₂ and PR between the Mindray 9006 and CO-Oximetry or between the Mindray 9006 and ECG. Also, there was no significant difference for SpO₂/PR between the motion and rest conditions ($p>0.05$).

Conclusions

The overall performance of the Mindray 9006 for SpO₂ and PR analysis is excellent and compares favorably with the Masimo MS-3.