

Comparison of Perkins, Tono-Pen and Schiøtz tonometers in paediatric patients under general anaesthesia

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Abstract

This cross-sectional study aimed to investigate if the Tono-Pen, Schiøtz and Perkins tonometers could be used interchangeably in general practice for measuring elevated intraocular pressure. A total of 48 eyes of 24 paediatric patients under general anaesthesia were checked with all 3 tonometers. All of the tonometers gave significantly different measurements from each other. However, with a mean difference of 1.4 mmHg and 95% limits of agreement of -0.7 to +3.6, the greatest agreement was between the Perkins and Tono-Pen tonometers. The Perkins tonometer is a hand-held variant of the Goldmann tonometer (the gold standard for intraocular pressure measures). Therefore the Tono-Pen with its ease of use and safety could be a reliable device for use in general practice.

Indexed Keywords

EMTREE medical terms: article; child; clinical article; controlled study; cross-sectional study; female; general anaesthesia; gold standard; human; infant; intermethod comparison; intraocular pressure; male; pediatric anaesthesia; preschool child; pressure measurement; reliability; safety; tonometer; tonometry; analysis of variance; comparative study; epidemiology; general practice; glaucoma; instrumentation; Iran; oculoplethysmography; sensitivity and specificity; standard; validation study; vision test

MeSH: Analysis of Variance; Anesthesia, General; Bias (Epidemiology); Cross-Sectional Studies; Family Practice; Female; Glaucoma; Humans; Infant; Intraocular Pressure; Iran; Male; Safety; Sensitivity and Specificity; Tonometry, Ocular; Vision Screening

Medline is the source for the MeSH terms of this document.

Device tradename: Perkins, Clement Clarke, United States, Schiøtz, Tono-Pen XL tonometry, Mentor, United States.

Manufacturers: Device manufacturer: Clement Clarke, United States; Mentor, United States.

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